Ahoy!'s

AmigaUser

$2.95/ CAN. $3.35
AUGUST 1988

COVER TO COVER AMIGA-MAZEMENT!

VIDEO DIGITIZERS AND FRAME GRABBERS

THE FLOCK OF OPTICAL OPTIONS FOR YOUR AMIGA

START THE PRESSES!

DESKTOP PUBLISHING: THE LATEST EDITIONS

SPEECH SET

TYPE-AND-RUN VOICE SYNTHESIS PROGRAM



EXEC FILE

BUSINESS APPLICATIONS AND SOLUTIONS

EYE ON CLI

UNDERSTANDING THE COMMAND LINE INTERFACE

PLUS NEWS • REVIEWS • GRAPHICS • PROGRAMMING TIPS • ENTERTAINMENT AND MORE FOR YOUR AMIGA

08
0 71896 48355 0

Ahoy!'s AmigaUser

CONTENTS

DEPARTMENTS

COLUMNS

FEATURES

Cover photography by Margaret Halajian

President
Michael Schneider

Publisher
David Allikas

Executive Editor
Michael R. Davila

Art and Production Director
Laura Palmeri

Senior Editor
Cleveland M. Blakemore

Technical Editors
David Barron
Bob Lloret

Consulting Editors
Morton Kevelson
Tim Moriarty
Dale Rupert

Entertainment Editor
Arnie Katz

Art Production
Christopher W. Carter

Circulation Director
W. Charles Squires

Advertising Director
Lynne Dominick

Director of Promotion
Mark Kammerer

Promotion Art Director
Stacy Weinberg

Controller
Dan Tunick

Advertising Representative
JE Publishers' Representative
6855 Santa Monica Blvd., Suite 200
Los Angeles, CA 90038
(213) 467-2266
Boston (617) 437-7628
Dallas (214) 660-2253
New York (212) 724-7767
Chicago (312) 445-2489
Denver (303) 595-4331
San Francisco (415) 864-3252

ISSUE NO. 56/2A AUGUST 1988

Ahoy! (ISSN #8750-4383) is published monthly by Ion International Inc., 45 W. 34th St., Suite 500, New York, NY 10001. Subscription rate for *Ahoy!'s AmigaUser:* 8 issues for $19.95, 16 issues for $37.95 (Canada $25.95 and $49.95 respectively). Second class postage paid at New York, NY 10001 and additional mailing offices.

Postmaster, send address changes to *Ahoy!*, 45 W. 34th Street, Suite 500, New York, NY 10001. Direct all address changes or matters concerning your subscription to *Ahoy!'s AmigaUser*, P.O. Box #341, Mt. Morris, IL 61054 (phone: 815-734-4151). Editorial inquiries and review samples should be sent to *Ahoy!'s AmigaUser*, 45 W. 34th St., Suite 500, New York, NY 10001.


CINEMAWARE
PRESENTS
MOE
the THREE STOOGES™
LARRY
CURLY
Can THREE Stooges
Save ONE orphanage
From FOREclosure?!
OUR HEROES
They can save the day by making ASSETS of themselves!
"NYUK, NYUK."
"OH, A WISE GUY!"
"RUFF! RUFF!"
THE EVIL BANKER
He took their NEST EGG and told them to BEAT IT!
THE WIDOW AND HER 3 BEAUTIFUL DAUGHTERS
They're about to be thrown out on their ARREARS!
Producers ROBERT & PHYLLIS JACOB
MASTER DESIGNER SOFTWARE
THE THREE STOOGES
MOE
CURLY
Actual Amiga Screens

VIEW FROM THE BRIDGE

Ahoy!'s AmigaUser Expands to 8 Issues a Year!

This is the thanks we get. We knock ourselves out making the premier issue of *Ahoy!'s AmigaUser* the best we can—and what do you do? You flock to the stores in record numbers. You spread the word through users groups and bulletin boards. You make the issue sell so well that you leave us no choice but to double from 4 to 8 issues a year. Don't you think we have lives outside this office? Never mind—we'll just set up cots behind our desks and work 'round the clock, and hope we do such a good job that you force us to go *monthly!*

The funny thing is, we couldn't be happier.

We're thrilled by the reception you've given us, and are especially grateful to those who wrote with their suggestions (see *Flotsam*, page 63, for a sampling). In all seriousness, we hope 8 time a year publication proves just a temporary resting place on the way to monthly status.

Now the confusing part. *Ahoy!'s AmigaUser* will henceforth be published in the following eight months: January, March, May, July, September, October, November, December. But this new schedule becomes effective with the November '88 issue. That means that there'll be no September or October issues in '88. Subscribers, of course, pay only for the issues they receive.

This month's other exciting news is the revamping of the *Ahoy!* Access Club. Founded 2½ years ago to provide its members with discounts on products advertised in *Ahoy!* (our C-64/128 publication), it has been expanded to a full-blown buyers' cooperative that every Amiga owner will want to take advantage of. See page 43 for complete details.

Come to think of it, the contents of the August *Ahoy!'s AmigaUser* are pretty exciting too:

• We didn't decorate this month's cover with birds to please the Audobon Society. We wanted to convey the essence of video digitization: taking something out of the real world, and through the miracle of the computer, improving upon it. It would be hard to improve upon Morton Kevelson's survey of *Video Digitizers and Frame Grabbers*, in which he eyeballs the three available hardware/software packages for your Amiga. (Turn to page 38.)

• If you're thinking about laser-printing your own newsletter, congratulations! You bought the right computer for the job. To select the right software for the job, refer to *Desktop Publishing: The Latest Editions.* Ted Salamone compares three recent releases from a price and performance standpoint. (Turn to page 64.)

• When you want to impress a friend with your Amiga, one of the first things you show off is its speech synthesis capability. After you enter and run Bob Spirko's *Speech Set*, your friends will really be speechless! (Turn to page 30.)

• One of the features in our premier issue singled out for praise by *INFO Magazine* was *Eye on CLI.* The reviewer for that esteemed Commodore journal called it "a fascinating column...that sent me scurrying to the keyboard. There's a lot more to DIR and LIST than I had even dreamed." This month Richard Herring takes you beyond your dreams and *Behind ASSIGN.* (Turn to page 77.)

• Our three month gap between issues has made it difficult to keep up with new releases, but we've packed a sizeable number into this month's *Reviews* and *Entertainment Software* sections. (Turn to pages 52 and 20 respectively). And be sure to read *Scuttlebutt's* prerelease information on all the products we *will* be able to review now that our output of magazines has doubled. (Turn to page 6.)

Mind if we let you explore the rest of this issue by yourselves? We'd like to get a few hours' sleep before we start on the next issue. Please—no more calls between midnight and 4 a.m.!

—David Allikas

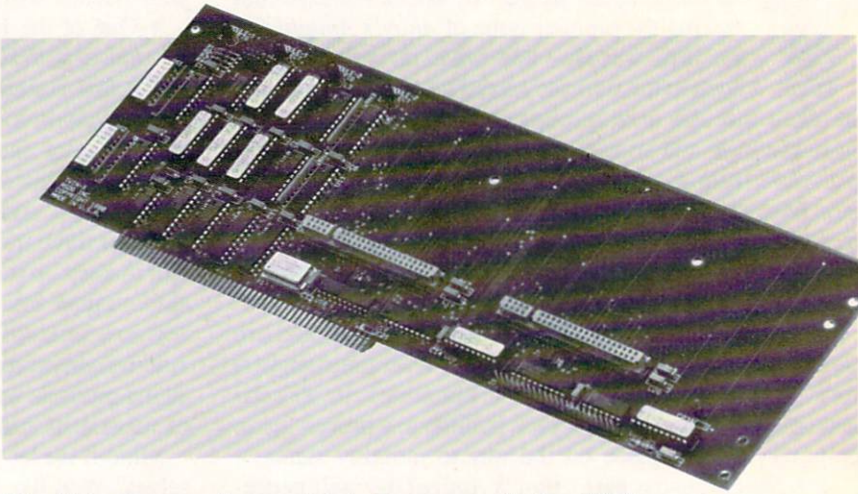
TERMINAL PROGRAM • EXTERNAL DRIVE • PRODUCTIVITY PACKAGE • AMIGA COLOR SEPARATIONS • REAL WORLD INTERFACE • DESTOP VIDEO CONTEST • DRUM MACHINE • MIDI CONVENTION • GAMES FROM TITUS, DISCOVERY, DATASOFT • CAD PROGRAM • COMPILER UPGRADE

REAL WORLD INTERFACE

Intended for plugging the Amiga 2000 in to industrial and research applications, ASDG's Twin-X expansion card can host any two standard or one double wide IEEE 959 modules. (These modules are available from numerous vendors, covering every common form of input/output control.) The card provides all the necessary logic for converting Amiga bus cycles into Intel style bus cycles and back again. Also, a standard auto-configuring interface allows modules residing on Twin-X to auto-configure under Kickstart 1.2 or higher.

ASDG has begun development of five IEEE 959 modules of their own, which they promise to offer at prices below the industry standard: dual RS-232, quad RS-232, SCSI, MC68881/MC68882 Floating Point, and IEEE 488 (GIB) modules.

ASDG, Inc., 608-273-6585 (see address list, page 12).



The Twin-X expansion card interfaces your Amiga 2000 with industrial and research applications. *READER SERVICE NO. 235*

600K AMIGAS

Fun facts to know and tell: according to their announcement at May's Amiga Developers' Conference, Commodore has now shipped over 600,000 Amigas worldwide. Additionally, Commodore sets at over 1100 the number of software programs that have been written for the Amiga in all categories.

Commodore, 215-431-9100 (see address list, page 12).

HIGH QUALITY CAD

X-CAD Designer ($599) incorporates a host of sophisticated drawing and editing features for both architectural and mechanical design users. The 2D computer aided design system displays over 1100 lines per second, many times faster than comparably priced programs for the IBM PC/AT. The program also features a multiwindowed software environment and a command structure based on simple English verb-noun-adjective combinations (e.g., "Draw Line Tangential"). Aegis' *Draw Plus* format is supported. The 350 page manual includes a tutorial—and it sounds like you'll need it.

Haitex Resources, 214-241-8030 (see address list, page 12).

VIDEO CONTEST

Aegis Development's second annual Desktop Video Contest, running through September 1, offers prizes ranging from gift certificates to an Amiga 2000 system. Videos must be created using an Amiga with one or more Aegis products, and any other hardware or software. All submissions must be the original work of the entrant, on ½" tape, under five minutes in length, and accompanied by the official form available from Aegis or an Amiga dealer. Entries will be judged in two categories—amateur (not for pay) and professional (for pay)—based on best animation, special effects, computer and software use, artwork, creativity, editing, storyline, sound, and overall quality and ingenuity. You may enter as many times as you wish.

Aegis Development Inc., 213-392-9972 (see address list, page 12).

ADDED DRIVE

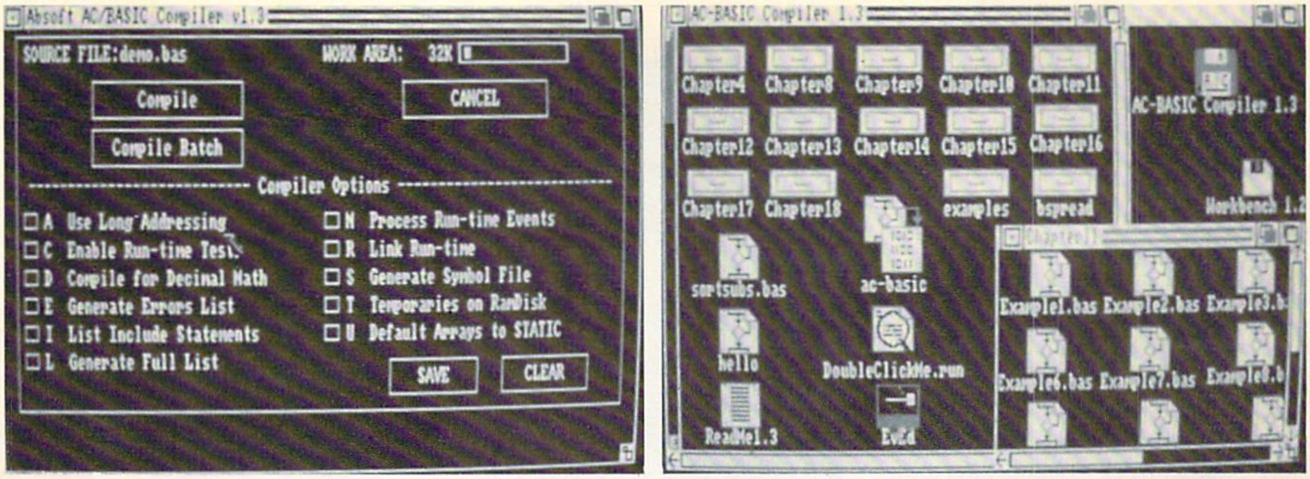
The Master-3A external 3½" drive ($189) improves upon Commodore's 1010 with a 25" input cable, permitting users to place the drive in a variety of positions around the Amiga. The Master-3A is also slimmer and smaller than the 1010; and unlike some third party drives, it has an external port for daisy chaining additional drives. A one year parts and labor warranty is included.

Surfside Components, 408-462-9494 (see address list, page 12).

MIDI CONVENTION

MIDI Expo West, the Conference and Exposition of MIDI Music, will occur at Anaheim's Marriott Convention Center on September 10-11. It follows last December's New York show,


A Worldwide Bestseller!
LEADER BOARD™
PRO GOLF SIMULATOR
AMIGA & MACINTOSH VERSIONS FEATURE A COURSE ARCHITECT WHICH ALLOWS YOU TO CREATE YOUR OWN GOLF COURSES!
"The sports simulation of the year, if not the decade!" Zzap 64 (U.K.)
"Movements of the golfer and the ball are superb!" Compute! Magazine
"As addictive as the real game..." Compute!'s Gazette
"A modern golf classic..." A+ Magazine
World Class
Find out why World Class Leader Board has been rated the #1 golf program throughout the world by critics and users.
World Class Leader Board features the most stunning, realistic graphics available in a golf simulation. And because the look and feel are so life-like, it may improve your actual golf game as well!
Commodore 64
Macintosh
Amiga
Apple
IBM
World Class Leader Board features three famous 18 hole golf courses and each authentically reproduces the distance, traps, trees, rough and water hazards of:
- St. Andrews "The Most Revered Course in Golf"
- Doral Country Club "The Florida Blue Monster"
- Cypress Creek "The Largest and the Finest"
A fourth course, The Gauntlet Country Club, has been designed to be the ultimate golf challenge.
Also available for $19.95
Famous Courses of the World Vol. 1 features-
Harbor Town, Sunningdale, Dorado Beach, Pineridge (Access Course)
Famous Courses of the World Vol. 2 features-
Colonial, Pebble Beach, Muirfield, Glenmoor (Access Course)
Famous Courses of the World Vol. 3 features-
Saw Grass, Fire Stone Country Club, Banff Springs, Canada, Royal St. George
ACCESS SOFTWARE, INC. 545 West 500 South, Bountiful, Utah 84010
ACCESS™
Software Incorporated



Version 1.3 of the AC/BASIC *compiler offers 100% compatibility with Amiga BASIC statements and functions, plus new examples, some rewritten routines, and fixes to several bugs.* *READER SERVICE NO. 229*

where over 3500 musicians, songwriters, and other MIDI enthusiasts explored the range of digital music instruments, equipment, and services. An educational seminar program will cover MIDI basics, sampling techniques, and other topics.

Expocon Management Associates, 203-259-5734 (see address list, page 12).

GREATER EMULATOR

The 64 Emulator 2 improves upon the emulation capabilities of the previous version, offering additional disk drive commands, an ML monitor, a "freeze" option to transfer protected software to 3½" disks, improved sprites and raster interrupts, and compatibility with all 68010 and some 68020 processors. But the new version's focus is on facilitating the user's transition from the C-64 world to the Amiga, offering such capabilities as the use of C-64 serial printers directly from Amiga software. Software for transferring programs and data from 64 to Amiga disks now runs in native Amiga mode. Also, users with 1581 disks can now read them directly using the Amiga 3½" drives, and users with Amiga 5¼" drives can read 1541/71 format disks. Price is $59.95 with serial interface cable for connecting C-64 peripherals to the Amiga, $39.95 without. Version 1 owners can upgrade for $13, or $10 plus their original disk.

ReadySoft Inc., 416-731-4175 (see address list, page 12).

OXXI OVERSEAS

The *MaxiPlan 500* and *MaxiPlan Plus* spreadsheet programs will be made available in native language versions in France and Germany. Each includes a translated manual, screen text including menus, output of displayed and printed international characters through the Amiga's SetMap command, and support of the PAL display format.

Oxxi Inc., 213-427-1227 (see address list, page 12).

COMPILER UPGRADE

Version 1.3 of Absoft's *AC/BASIC* compiler ($195) includes such improvements as 100% compatibility with Amiga BASIC statements and functions, and fixes to known bugs. Several components of the runtime library were completely rewritten, including random file I/O, fielded string processing, and several floating point arithmetic routines. An included spreadsheet demonstrates how to write application programs that take advantage of the Amiga's ROM routines.

Current owners whose registration cards are received by Absoft before July 16 will be sent the upgrade free; after that, the price to upgrade will be $50. Absoft's new technical support line is open from 9 a.m. to 3 p.m. EST, Monday to Friday.

Absoft, 313-853-0050 (see address list, page 12).

MORE ON OXXI

A-Talk III ($99) adds new features and an increased number of communications protocols to Oxxi's *A-Talk Plus* modem and terminal emulator program. In addition to an expanded Script Language with a Learn Mode for easy automation of communication tasks, the program features a 60-number phone directory, 100% faster Kermit file transfer speed, expanded keypad support for the Amiga 500 and 2000, use of SetMaps for access to foreign character sets, and interlaced and non-interlaced Tektronix 4010/4014 terminal emulations. Single screen menu requester operation allows global settings of all parameters for each host system. New protocols include Ymodem-1K, Ymodem Batch, and Zmodem.

Oxxi Inc., 213-427-1227 (see address list, page 12).

THREE LOAD TOGETHER

The Disc Company's *Critic's Choice Productivity Bundle* ($249.95) combines their own *KindWords* word processor, Oxxi's *MaxiPlan* spreadsheet, and Software Visions' *MicroFiche Filer* database manager into a package that offers a $100 saving over the combined individual prices.

The Disc Company, 313-665-5540 (see address list, page 12).

INVESTOR UPDATE

The Investor's Advantage Version 2.00 ($99.95) incorporates a different color scheme that will not use up ribbons as fast, a more flexible user interface through the elimination of the main menu and the ability to change moving averages on the fly, zoom capability and more plot points for onscreen graphs, and more. Files created with Version 1 will be compatible with Version 2.00. The cost to registered owners is $25 plus $2.40 postage (MI residents add 4%); those who purchased

Version 1 after May 1, 1988 will receive the upgrade free (dated receipt or invoice required).

Software Advantage Consulting Corporation, 313-463-4995 (see address list, page 12).

THE C SCENE

Three books on C programming:

Artificial Intelligence Programming in C offers an introduction to the subject and a library of over 100 programs and functions (also available on disk) illustrating all aspects of AI and enabling programmers to build their own expert system. 260 pages; $17.95 (paperback).

TAB Books Inc. (see address list, page 12).

The Waite Group's *Inside the Amiga with C, Second Edition* explains AmigaDOS (including version 1.2) and pays particular attention to the Amiga 500. Several new programs demonstrate the use of color palettes and registers, and a software toolkit contains a library of C routines for creating and managing screens, windows, input from gadgets, and control graphics. 410 pages; $24.95.

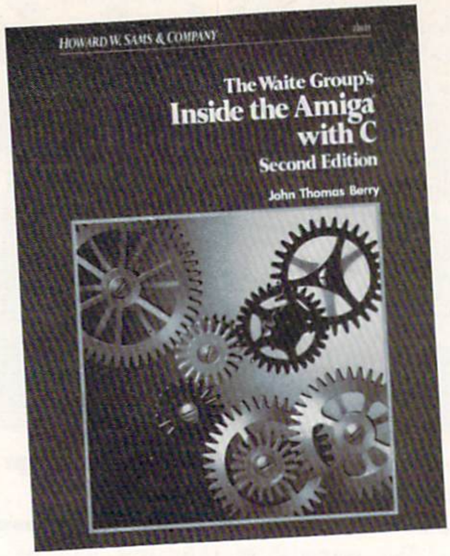
Howard W. Sams, 317-298-5400 (see address list, page 12).

The C Programming Language, Second Edition is based on the draft-proposed ANSI C Standard now being developed to standardize and modernize the language. New features from the ANSI standard are delineated. Also added are a C reference manual and an appendix describing the standard library. 284 pages; $40 clothbound, $28 paperback.

Prentice Hall, 201-592-2000 (see address list, page 12).

TYPING FOR ADULTS

IntelliType ($49.95) uses artificial intelligence and an adventure story to teach adults typing in one month of 45 minute a day sessions. Each new lesson is another cliffhanger episode starring Ted and Laura as they deal with international agents, industrial spies, and a secret formula that could change the world. The program's artificial intelligence monitors 27 different kinds of typing errors in 9 categories, such as dyslexia errors and high keystroke speed variance. The habits of the user are analyzed, and drills to address specific problems are prescribed. Typing is analyzed with bar charts that depict accuracy, speed, and error types.



Second edition emphasizes the A500. READER SERVICE NO. 230

Electronic Arts, 415-571-7171 (see address list, page 12).

MORE PROFESSIONAL

With Version 1.1 ($395), Gold Disk adds to *Professional Page* the ability to make full color and mechanical separations on paper or film, bypassing conventional print shop techniques. Color picture information is maintained with up to 256 colors, or 4096 colors in HAM mode. Precision registration marks, color customizing and correction features, standard and bleed crop marks, and variable line densities and screen angles are all possible. Also, the new version outputs to all dot matrix printers listed in Preferences.

Gold Disk, 416-828-0913 (see address list, page 12).

GAMES

Discovery has lowered the price of *Arkanoid* from $49.95 to $29.95, along with adding 33 new levels (for a total of 66) and an option to slow the action down. A 30-day unconditional money back guarantee will also be offered.

Discovery Software, 301-268-9877 (see address list, page 12).

Black Shadow ($34.95) lets one or two (simultaneous) players traverse a scrolling landscape, attempting to destroy an asteroid by outgunning their enemies and bombing key installations.

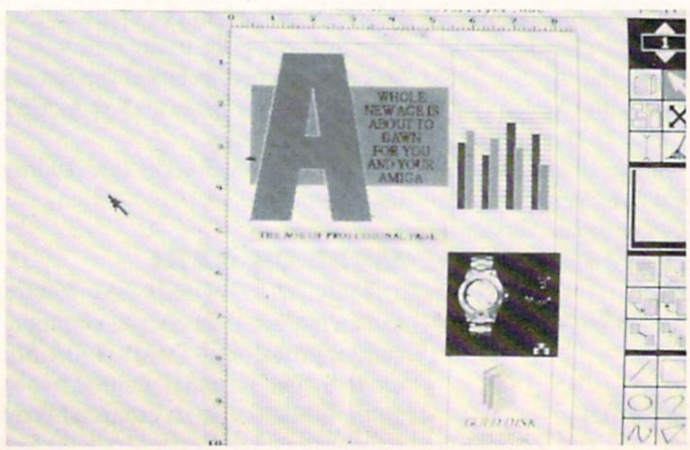
Scorpion, 201-663-0202 (see address list, page 12).

IntraCorp is offering a $10,000 grand prize and 2500 software gift certificates worth up to $200 each in a contest to launch *Murder on the Atlantic* ($39.95). Set in 1938, the game requires software sleuths to explore a luxury liner's 600 salons and staterooms seeking clues, decoding locks, avoiding booby traps, and locating and questioning the 40 suspects. There are over 60 clues, and 16 questions to answer; the contestant who submits the most correct answers will win the grand prize.

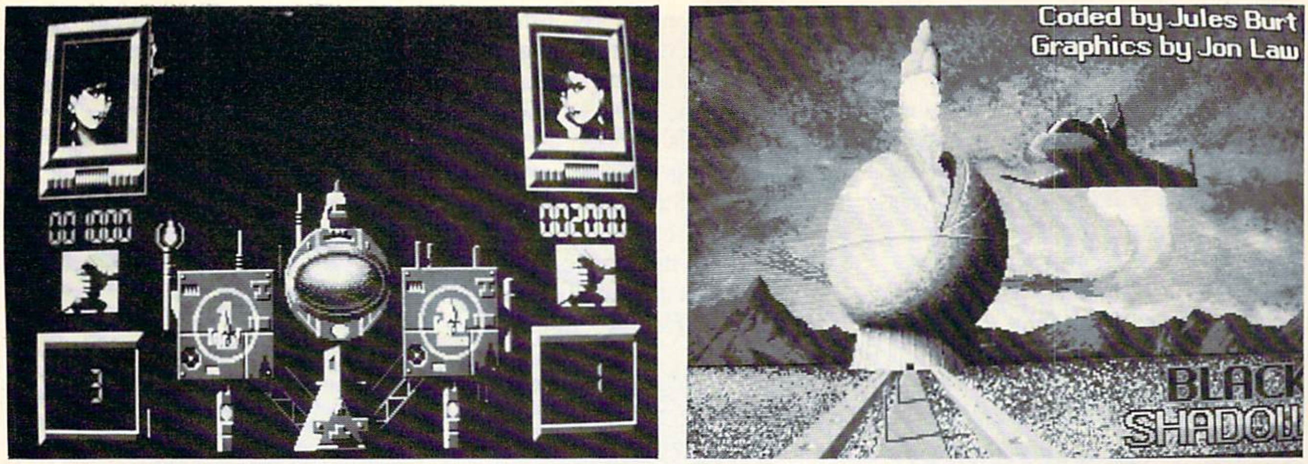
IntraCorp Inc., 305-252-9040 (see address list, page 12).

Alternate Reality: The City ($39.95), newly available for the Amiga, places fantasy role-playing fans in The City of Xebec's Demise, where everything from the weather to the law is an obstacle. The first in a series of adventures, this episode allows players to become oriented to the world of Alternate Reality and build their character attributes in order to survive in subsequent sagas.

Datasoft/Electronic Arts, 415-571-7171 (see address list, page 12).



Professional Page 1.1 ***adds color separation capabilities (hard to appreciate in our black and white reproduction). READER SERVICE NO. 231***



Two players can simultaneously traverse the scrolling landscape of **Black Shadow.** *READER SERVICE NO. 232*

New and converted titles from Paragon:

Master Ninja: Shadow Warrior of Death ($34.95) sends the title character into the castle of a Japanese warlord in quest of a stolen magic sword. The castle is of course replete with evil ninjas and Samurais, black magic curses, deadly tigers, and the like.

Twilight's Ransom ($34.95) places you in an even more fearsome environment—the streets of Liberty City, where you must confront hordes of hustlers, con men, drug dealers, and other outcasts in your search for your kidnapped girlfriend. Saving her will require you to unravel a web of danger and intrigue involving the treacherous underworld of international gun running. You'll visit over 175 locations, from the subway system to Liberty Park.

Wizard Wars ($44.95) casts the player as a heroic mage who must defeat dragons, elves, and other creatures to thwart the mad wizard Aldorin.

Available in September, *Guardians of Infinity* ($44.95) sends you, a 21st century scientist, back to 1963 to prevent the assassination of President Kennedy—an event that should not have occurred in the normal course of history, and which is threatening to unravel the time continuum and destroy the Earth. You'll send your five agents to critical cities like Washington, Hyannis Port, and Dallas, trying to convince over 125 historical figures that the President's life is in danger.

Paragon Software, 412-838-1166 (see address list, page 12).

From Titus Software, $39.95 each:

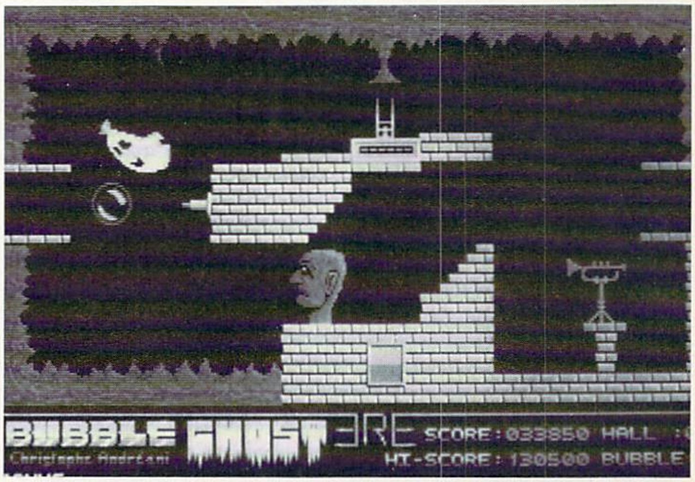
Crazy Cars lets players start with a Mercedes 560 SEC, then progress to a Porsche 911 Turbo, a Lamborghini Countach, and finally a Ferrari GTO en route to winning six challenge races containing 72 skill levels.

Fire and Forget puts you behind the wheel of Thunder Master, the ultimate fighting machine, equipped with a V-16 triple turbo engine and tetra-nuclear propulsion missiles with a fire power of 117 gigawatts per second. You'll need it to save a war-torn world from a full scale nuclear war.

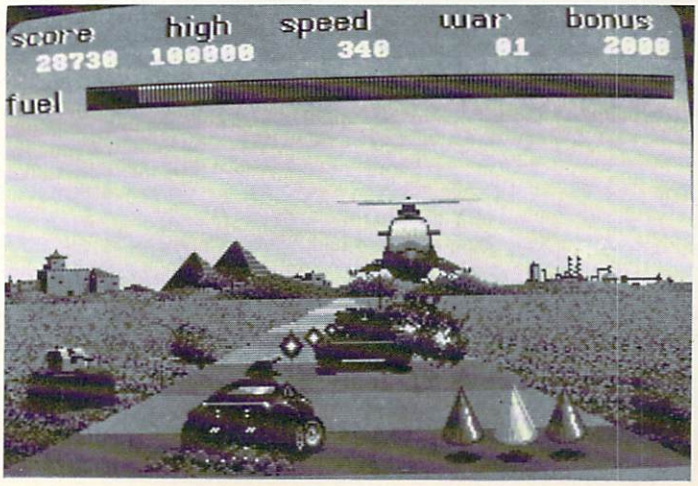
Titus Software, 818-709-3692 (see address list, page 12).

Two from Accolade:

As the *Bubble Ghost* ($34.95), you must blow a bubble through a castle's 35 hazard-filled, increasingly difficult rooms. Disembodied heads, electric fans, and candles are among your obstacles, as well as numerous sharp objects like shears and spikes that can



Bubble Ghost's *bubble pops upon contact with a wall or an object inside one of the castle's rooms. Spikes and the like add to the fun.* *READER SERVICE NO. 233*



Fire and Forget *features Thunder Master with its tetra-nuclear propulsion missiles and V-16 triple turbo engine.* *READER SERVICE NO. 234*

burst your bubble. Secret passageways can save you time and help you avoid some of the more difficult levels.

Pinball Wizard ($39.95) features four different pinball simulations, each with backboard, flippers, tilt sensors, and the like. The building set lets players position targets, flippers, bumpers, spinners, and discs anywhere on the table and adjust the elasticity of the rebounds, slope of the table, sensitivity of the sensors, and speed of the ball. The table can be designed and painted in any way desired.

Accolade, Inc., 408-985-1700 (see address list, this page).

Electronic Arts has made a minority investment in Strategic Simulations, Inc., acquiring the rights to distribute SSI software in the United States and Canada. The first EA/SSI release for the Amiga is *Heroes of the Lance* ($39.95), a single-player action game based on the "Dragons of Despair" DragonLance game module. There are eight actual Heroes of the Lance characters for the player to control.



EA's Trip Hawkins (left) and SSI's Joel Billings have affiliated and are ready to declare war on the competition. READER SERVICE NO. 236

Electronic Arts, 415-571-7171 (see address list, this page).

Viacom Enterprises has licensed First Row Software Publishing to produce two games for the Amiga at $39.95 each. *Rod Serling's The Twilight Zone*, an interactive game for one player, was scheduled at press time for June release; and *Jackie Gleason's The Honeymooners*, for up to four players, will be available in September.

Viacom Enterprises, 212-575-5175 (see address list, this page).

The *S.P.O.C. Entertainment Package* ($25.00) contains over 30 games, demos, educational programs, and puzzles. A sample disk is available for $5.00.

S.P.O.C. (see address list, this page).

FLIGHT BOOK

Gunship: 82 Challenging New Adventures consists of aviation scenarios which the Amiga user can recreate with MicroProse's *Gunship* or Cosmi's *Super Huey* helicopter simulators (as well as *ThunderChopper* and *Helicopter Simulator)*. 208 pages; $12.95.

TAB Books (see address list, this page).

Companies Mentioned in Scuttlebutt

Contact manufacturers directly for more information.

ASDG, Inc.
925 Stewart Street
Madison, WI 53713
Phone: 608-273-6585

Absoft
2781 Bond Street
Auburn Hills, MI 48057
Phone: 313-853-0050

Accolade
550 W. Winchester Blvd., Suite 200
San Jose, CA 95128
Phone: 408-985-1700

Aegis Development Inc.
2115 Pico Blvd.
Santa Monica, CA 90405
Phone: 213-392-9972

AlohaFonts
P.O. Box 2661
Fair Oaks, CA 95628-9661

Commodore
1200 Wilson Drive
West Chester, PA 19380
Phone: 215-431-9100

Computerfest
P.O. Box 28
North Aurora, IL 60542
Phone: 312-897-5788

Datasoft
c/o **Electronic Arts**

Electronic Arts
1820 Gateway Drive
San Mateo, CA 94404
Phone: 415-571-7171

Discovery Software
163 Conduit Street
Annapolis, MD 21401
Phone: 301-268-9877

Expocon Management Associates, Inc.
3695 Post Road
Southport, CT 06490
Phone: 203-259-5734

Gold Disk
P.O. Box 789, Streetsville
Mississauga, Ontario
Canada L5M 2C2
Phone: 416-828-0913

Haitex Resources
208 Carrollton Park
Carrollton, TX 75006
Phone: 214-241-8030

Howard W. Sams & Co.
4300 West 62nd Street
Indianapolis, IN 46268
Phone: 317-298-5400

InterActive Softworks
2521 South Vista Way – Suite 254
Carlsbad, CA 92008
Phone: 619-434-5327

IntraCorp Inc.
14160 SW 139th Court
Miami, FL 33186
Phone: 305-252-9040

Ketek
P.O. Box 203
Oakdale, IA 52319
Phone: 319-338-7123

New Horizons Software
P.O. Box 43167
Austin, TX 78745
Phone: 512-328-6650

Oxxi Inc.
3428 Falcon Avenue
Long Beach, CA 90807
Phone: 213-427-1227

Paragon Software
600 Rugh Street – Suite A
Greensburg, PA 15601
Phone: 412-838-1166

Prentice Hall
Prentice Hall Building
Englewood Cliffs, NJ 07632
Phone: 201-592-2000

ReadySoft Inc.
P.O. Box 1222
Lewiston, NY 14092
Phone: 416-731-4175

S.P.O.C.
Box 299
Kiowa, OK 74553

Scorpion
19 Harbor Drive
Lake Hopatcong, NJ 07849
Phone: 201-663-0202

Software Advantage Consulting Corporation
37346 Charter Oaks Blvd.
Mt. Clements, MI 48043
Phone: 313-463-4995

Surfside Components
P.O. Box 1836
Capitola, CA 95010
Phone: 408-462-9494

TAB Books Inc.
Blue Ridge Summit, PA 17294-0580

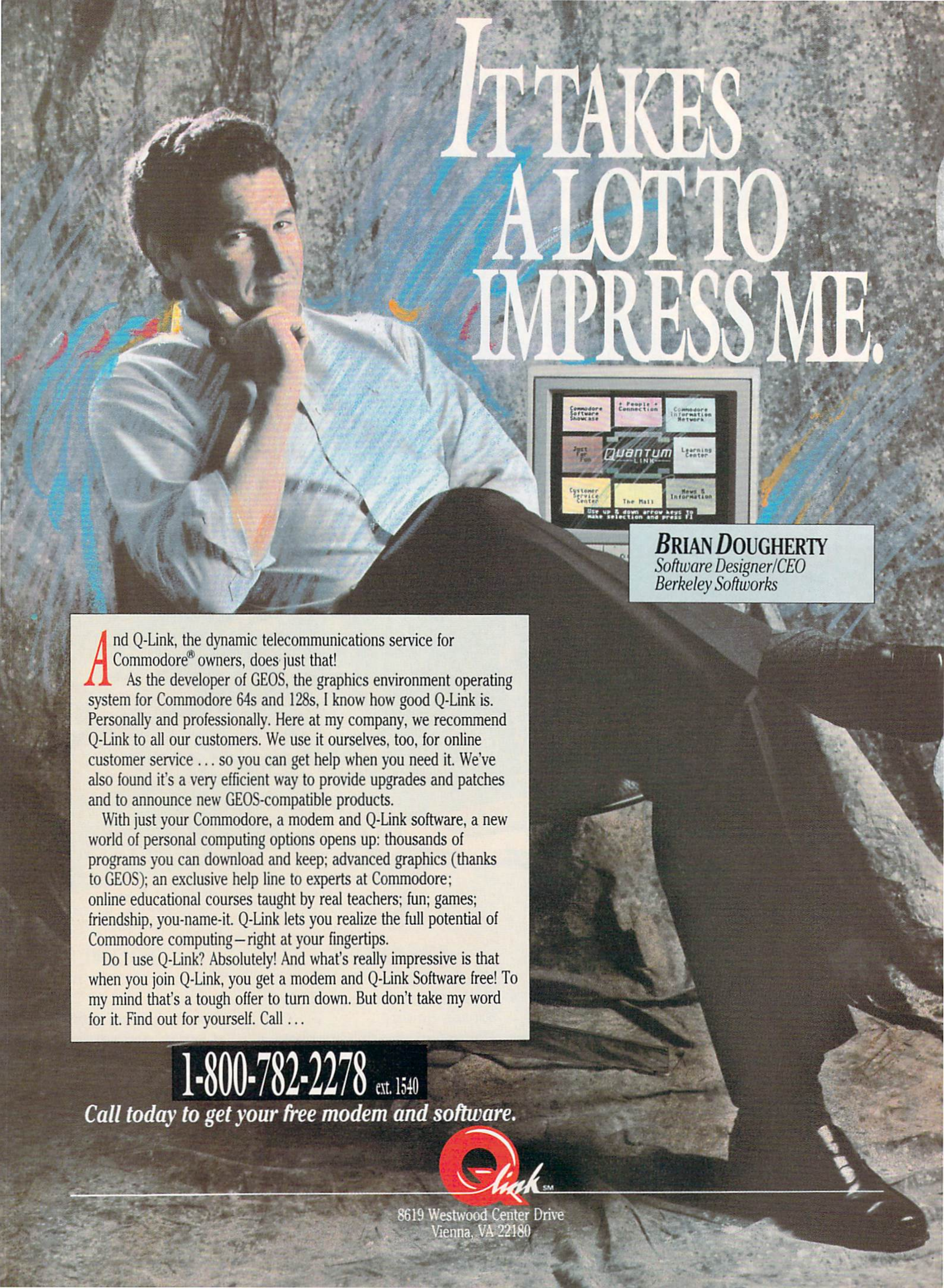
The Disc Company
3135 South State Street
Ann Arbor, MI 48108
Phone: 313-665-5540

Titus Software
20432 Corisco Street
Chatsworth, CA 91311
Phone: 818-709-3692

Viacom Enterprises
1211 Ave. of the Americas
New York, NY 10036
Phone: 212-575-5175

Reader Service No. 207 →


ONE GREAT GAME
DESERVES ANOTHER
ARKANOID
TAITO
DISCOVERY SOFTWARE INTERNATIONAL
33 NEW EVELS
ZOOM!
DISCOVERY SOFTWARE INTERNATIONAL
A NEW CHALLENGE
ARKANOID
• The best just got better
• Reviewers agree: unparalleled arcade quality
• Upgraded to 66 knockout levels!
• Twice chosen as arcade "game of the year"
• 30-day unconditional money- back guarantee
ZOOM!
• At last, a dynamic new game concept
• A mesmerizing combination of action and strategy
• 50 levels. 1-2 players or 2 players at once
• She'll love it too, so will the kids!
• 30-day unconditional money-back guarantee
DISCOVERY SOFTWARE INTERNATIONAL


IT TAKES A LOT TO IMPRESS ME.
BRIAN DOUGHERTY
Software Designer/CEO
Berkeley Softworks
And Q-Link, the dynamic telecommunications service for Commodore® owners, does just that!
As the developer of GEOS, the graphics environment operating system for Commodore 64s and 128s, I know how good Q-Link is. Personally and professionally. Here at my company, we recommend Q-Link to all our customers. We use it ourselves, too, for online customer service . . . so you can get help when you need it. We've also found it's a very efficient way to provide upgrades and patches and to announce new GEOS-compatible products.
With just your Commodore, a modem and Q-Link software, a new world of personal computing options opens up: thousands of programs you can download and keep; advanced graphics (thanks to GEOS); an exclusive help line to experts at Commodore; online educational courses taught by real teachers; fun; games; friendship, you-name-it. Q-Link lets you realize the full potential of Commodore computing – right at your fingertips.
Do I use Q-Link? Absolutely! And what's really impressive is that when you join Q-Link, you get a modem and Q-Link Software free! To my mind that's a tough offer to turn down. But don't take my word for it. Find out for yourself. Call . . .
1-800-782-2278 ext. 1540
Call today to get your free modem and software.
Q-Link SM
8619 Westwood Center Drive
Vienna, VA 22180

PRINTER REPAIR

Printer Troubleshooting & Repair provides users who have a basic understanding of electronics with answers to problems that commonly plague dot matrix, inkjet, and laser printers. 250 pages; $19.95.

Howard W. Sams & Company, 317-298-5400 (see address list, page 12).

PROWRITE POSTSCRIPT

ProScript ($49.95) allows users of the *ProWrite* word processor to translate files into PostScript format, the industry standard for producing high quality printed output. Translated files can be sent directly to a PostScript-compatible printer or saved to a file for later printing. If the document uses PostScript fonts (included with *ProScript)*, the printer will use the actual fonts resident in the printer for the best quality results. If a non-PostScript font is used, a bit map image of the font will be downloaded to the printer. All color graphics in the *ProWrite* document are printed as well, with the colors being first converted into shades of gray. The program also offers the option to reduce or enlarge the printout, choose paper size, print only odd or even pages, and control the number of gray shades used for graphics. Mail merged documents can also be printed.

New Horizons Software, Inc., 512-328-6650 (see address list, page 12).

PRESENTATION PROGRAM

DeluxeProductions ($199.95) makes it possible to combine hi-res graphics and computer animation to create video presentations for business and educational uses. The program is based on a storyboard design concept, allowing directors to create up to 12 scenes per production, with each scene containing up to 5 clips and each clip containing one animated object. Many features required by video professionals are provided, such as the ability to work in overscan and chain productions together to create long or looped presentations. Also included are pause, forward, and backward functions, double buffered animation capability, a palette of 4096 colors, and a selection of over 40 wipes (i.e., fades, pops, spirals, and scatters).

Electronic Arts, 415-571-7171 (see address list, page 12).

KETEK SUPPORT

Computer accessories from Ketek, makers of the Command Center line of system enclosures:

The Sound Trap ($49.95) encloses almost any 80 column printer with sound-absorbing foam and wood to reduce noise by up to 90%. Included are an acrylic lid and a slide-out shelf for catching printout.

The Remote Power Controller ($89.00) provides outlets for up to five devices, each offering 3-way protection against surges and spikes. The base unit can mount behind or under your desk, while the 3⅜ x 5¾ x 1¼" controller is kept close at hand.

The Tilt/Swivel Monitor Stand ($14.95) lets you turn your monitor to the desired angle, with cushioned pads to hold the monitor securely in place.

Ketek, 319-338-7123 (see address list, page 12).

ILLINOIS SHOW

The third annual Chicagoland Commodore Computer Fest is scheduled for August 28 at the Exposition Center at the Kane County Fairgrounds in St. Charles, IL. National speakers and 64, 128, and Amiga vendors will be featured. Admission is $5.00.

Computerfest, 312-897-5788 (see address list, page 12).

Continued on page 82

AMIGA TOOLBOX

Compiled by Michael R. Davila

Contributors to *Amiga Toolbox* will be compensated at competitive industry rates for their short routines and programming/hardware hints. Please include the documentation, program, and source code on a 3½" disk, along with a printout. If programming in any language other than Amiga BASIC, be sure to specify the compiler used and the manufacturer's name. Include a SASE. Send to *Amiga Toolbox, c/o Ahoy!'s AmigaUser,* Ion International Inc., 45 West 34th Street–Suite 500, New York, NY 10001.

GO BORDERLESS

Amiga BASIC gives programmers easy control of the computer's powerful window options. One option easily available in C and assembler, but off limits in BASIC, is the borderless window. Full screen, borderless windows are handy in drawing or 80-column, 25-line text programs.

Here's a subprogram you can use in your own applications. *MakeBorderlessWindow* uses the window number, the corner coordinates, and the screen number to open a smart-refresh, borderless window. A short demo program opens a window the full size of the Workbench screen and numbers the rows and columns.

The subprogram uses the MoveLayer and SizeLayer functions from the Layers library to modify a normal Amiga BASIC smart-refresh window. You'll need to have the file "layers.bmap" in the "libs" directory on your Workbench disk. You can get "layers.bmap" in the public domain, or create it yourself with the ConvertFD program from the Extras disk that came with your computer.

Note that we open and close the Layers library inside the routine. This leaves you free to open the maximum of five libraries in your program, so call *MakeBorderlessWindow* before you open any other libraries.

One quirk to be aware of: the CLS statement does not clear the entire window. You can work around this by using the LINE command to draw a rectangle the size of the full window in the desired color.

At the end of your program use the CLOSE or WINDOW statements to close or redefine any windows you've opened.

–Marc Welton
Des Moines, IA

```
DEFINT a-z
MakeBorderlessWindow 2, 0, 0, 639, 199, -1

FOR i = 1 TO 8
  PRINT "1234567890";
NEXT
FOR i = 1 TO 25
  LOCATE i, 1: PRINT MID$(STR$(i), 2);
NEXT
LOCATE 12, 30: PRINT "Click mouse to exit"
WHILE MOUSE(0) = 0: SLEEP: WEND
WINDOW CLOSE 2

'==================== MakeBorderlessWindow ====================
'
'Should be called before opening any other libraries.
'Requires "layers.bmap" to be in current or df0:libs directory
'
'==============================================================
'
SUB MakeBorderlessWindow(WindowNum,x1,y1,x2,y2,ScreenNum)STATIC
  LIBRARY "layers.library"
  x2 = x2 - 8: y2 = y2 - 13
  WINDOW WindowNum,,(x1, y1)-(x2, y2), 16, ScreenNum
  bWindow&     = WINDOW(7)
  BorderTop    = PEEK(bWindow& + 55)
  Layer&       = PEEKL(WINDOW(8))
  LayerInfo&   = PEEKL(Layer& + 68)

  ' Move top layer corners over border layer
  MoveLayer& LayerInfo&, Layer&, -4, -BorderTop
  SizeLayer& LayerInfo&, Layer&, 8, BorderTop + 2

  ' Tidy up GimmeZeroZero height, width and borders
  POKEW bWindow& + 112, PEEKW(bWindow& + 8)
  POKEW bWindow& + 114, PEEKW(bWindow& + 10)
  POKE bWindow& + 54, 0: POKE bWindow& + 55, 0
  POKE bWindow& + 56, 0: POKE bWindow& + 57, 0
  LIBRARY CLOSE
END SUB
```

GRAPHIC ANTICS

The Amiga's amazing graphics capabilities are like those of no other personal computer. Animation can be handled with great ease due to the high speed of the blitter. Amiga BASIC has been equipped to accommodate this graphic powerhouse. Type in the following routines for a demontration.

```
SCREEN 1,320,200,1,1
WINDOW 2,"Hypnotic Circles",(0,0)-(311,180),8,1
back:
FOR x = 30 TO 1 STEP -1
    CIRCLE (160,100),2*x
NEXT

FOR x = 1 TO 30
    CIRCLE (160,100),2*x,0
    NEXT
GOTO back
```

This program demonstrates the use of the CIRCLE command. First a window will open, and then inside a series of enlarging and shrinking circles will appear and disappear. This will produce a hypnotic effect. For the next program you will need a joystick plugged into Port 2.

```
'color draw
x=250 : y=50
WHILE 1
 LINE (250,100)-(x,y),INT(RND*4)
' LINE (250,100)-(x,y),0
 x=x+STICK(2)
 y=y+STICK(3)
oldx = x
oldy = y
```

Continued on page 72


THE NAME OF THE GAME IS SURVIVAL.
PLATOON™
In Vietnam, an American soldier soon learned that there were no winners in this deadly game. To survive each mission with his morale and sanity intact, and return to base safely, was all he could hope for. This was captured in the award-winning film, Platoon.
In Data East's Platoon, you will experience the full impact of the film as you lead your platoon into the jungles, villages, bunkers, foxholes, and underground tunnels of war-torn Southeast Asia.
There you will encounter guerilla fighters, snipers, booby-trapped trip wires, armed patrols, and napalm air strikes. You must pick up food, medical supplies, and ammunition along the way.
At times, the odds may seem insurmountable. But don't think about winning – to survive is enough.
FOR COMMODORE 64/128™ AND AMIGA,™ ATARI® ST, APPLE II SERIES,® AND IBM.®
DATA EAST
DATA EAST USA, INC.
470 NEEDLES DR., SAN JOSE, CA 95112. (408) 286-7074.
LICENSED BY
ocean
GAME DESIGN © 1987 OCEAN SOFTWARE LTD. PLATOON: TM & © 1986 HEMDALE FILM CORP. ALL RIGHTS RESERVED. COMMODORE, APPLE, ATARI, IBM, AND OCEAN ARE REGISTERED TRADEMARKS OF COMMODORE ELECTRONICS LTD., APPLE COMPUTERS, INC., ATARI CORP., IBM CORP., AND OCEAN SOFTWARE LTD., RESPECTIVELY.

EVEN MORE SOFTWARE!

ABACUS
- AssemPro ... *In Stock!*
- BeckerText ... Call
- Books! ... Call
- DataRetrieve ... Call
- TextPro ... Call

ABSOFT
- AC/Basic ... $139
- AC/Fortran ... $199

ACCESS SOFTWARE
- Echelon ... Call
- Leader Board ... $ 27
- Lipstick Plus ... $ 19
- Tournament Disk ... $ 14
- New! World Class Leader Board ... $ 29

ACCOLADE
- New! Apollo 18 ... $ 31
- New! Bubble Ghost ... $ 29
- Famous Courses 2 ... $ 17
- Fight Night ... Call
- New! 4th and Inches ... $ 31
- Graphic Studio ... $ 43
- Hard Ball ... Call
- Mean 18 ... $ 27
- New! Pinball Wizard ... $ 29
- New! Power At Sea ... $ 31
- Test Drive ... $ 31
- New! The Train ... $ 31

ACS
- Brush Works 1or2 ... $ 24
- Grade Manager ... $ 69
- Music Student ... Call
- QuizMaster ... Call

ACTIONWARE
- Capone ... $ 32
- Creature ... Call
- Phaser ... Call
- P.O.W. ... Call

ACTIVISION
- Beyond Zork ... $ 35
- Game-★ Basketb. ... $ 29
- Game-★ Baseball ... $ 29
- Game-★ Golf ... $ 29
- Game-★ Football ... $ 29
- GB Air Rally ... $ 28
- Infocom Titles!! ... Call
- Lurking Horror ... $ 29
- Music Studio ... $ 38
- Portal ... $ 29
- Shanghai ... $ 29
- Sherlock ... Call
- ToneTown ... $ 29

ADDISON-WESLEY
- Hardware Manual ... Call
- Intuition Manual ... Call
- Puppy Love ... $ 24
- Rom Kernal Manual ... Call
- Rom Exec Manual ... Call

AEGIS
- Animator/Images ... $ 84
- Art Disk ... $ 24
- Arazok's Tomb ... $ 32
- Audiomaster ... $ 43
- Diga ... $ 56
- Draw Plus ... $149
- Images ... $ 26
- Impact ... $ 54
- New! Lights, Camera, Action ... Call
- New! Modeler 3D ... Call
- Port Of Call ... $ 36
- Sonix ... $ 49
- Videoscape 3D ... $129
- Video Titler ... Call

AMINETICS
- People Meter ... $ 53

ANCO
- New! Art of Chess ... Call
- Flight Path 737 ... $ 19
- Grid Start ... $ 19
- Harrier Mission ... $ 19
- Karting Grand Prix ... $ 19
- Las Vegas ... $ 19
- New! Mike, Magic Dragon ... $ 19
- Sky Fighter ... $ 19
- XR35 ... $ 19

APPLIED VISIONS
- New! Sargon III ... $ 38

ARTWORX
- Bridge 5.0 ... Call
- Centerfold Squares ... $ 25
- Linkword Languages ... $ 24
- Strip Poker ... $ 32
- S.P. Data Disk #4 ... $ 15
- S.P. Data Disk #5 ... $ 15
- Thai Boxing ... $ 17

ASDG
- Cube Master ... $ 26
- FACC II ... $ 27

AVANT GARDE
- Benchmark Mod.2 ... $139
- IFF Library ... $ 74
- C Interface Library ... $ 74
- Simplified Library ... $ 74

BANTAM
- AmigaDOS Express ... $ 25
- DOS Manuals ... $ 22

BAUDVILLE
- Award Maker ... $ 39
- Video Vegas ... $ 29

B.E.S.T.
- Business Mgmt. ... $319
- General Ledger ... $ 79

BLANK SOFTWARE
- Sound Lab ... Call

BROWN WAGH
- Express Paint ... Call *(New Version!!)*
- Publisher+ ... Call
- Softwood File IIsg ... $ 74
- Stellar Conflict ... $ 29
- TV Show ... $ 74
- TV Text ... $ 69
- WordPlex ... $ 25
- Write & File ... $ 79
- Zuma Fonts (ea.) ... $ 26

BYTE BY BYTE
- Animate 3-D ... Call
- InfoMinder ... $ 69
- Sculpt 3-D ... Call
- New! Sculpt Animate Jr. ... $ 44
- New! Sculpt Animate Pro ... Call

CAPILANO
- Logic Works ... Call

CENTRAL COAST
- DISK-2-DISK ... *In Stock!*
- DOS-2-DOS ... $ 39
- Precisely ... $ 64
- Quarterback ... $ 54

CINEMAWARE
- Defender of Crown ... $ 31
- King of Chicago ... $ 31
- New! Lords of Rising Sun ... Call
- Rocket Ranger ... Call
- S.D.I. ... $ 31
- Sinbad ... $ 31
- Three Stooges ... *In Stock!*

COMMAND SIMULATIONS
- Blitzkrieg ... Call

COMPUMED
- Hacker Package ... $ 34
- Mirror ... $ 34

COMPUTER ARTS
- Deluxe Maps ... $ 19

CONSTELLATION SOFTWARE
- Gnome Ranger ... $ 15
- Karate King ... $ 19
- Larrie & the Ardies ... $ 15
- Persecuters ... $ 15
- New! Space Battle ... $ 19

COSMI
- New! Defcon 5 ... $ 29
- Super Huey ... $ 26

CREATIVE SOLUTIONS
- MultiForth ... Call

CRYSTAL ROSE
- Analytic Art ... $ 44

DELTA RESEARCH
- J-Forth ... $ 89

DIGITAL CREATIONS
- D'Buddy ... $ 58
- Digital Link ... $ 49
- Gizmos 2.0 ... Call

DIGITAL SOLUTIONS
- LPD Series ... Call
- LPD Writer ... *In Stock!*

DIGITAL SOUND CREATION
- A Drum ... $ 57

DIGITEK
- Amegas ... Call
- New! Clever & Smart ... Call
- Drum Studio ... $ 35
- New! Final Mission ... Call
- Hollywood Poker ... Call
- Thunder Boy ... $ 26
- Vampire's Empire ... Call

DISCOVERY
- Amnix ... Call
- Arkanoid ... Call
- DX Series ... Call
- Grabbit ... $ 24
- Marauder II ... $ 25

DR. T
- New! DX Heaven ... $119
- New! ESQ-apade ... $119
- KCS Sequencer ... *In Stock!*
- Other Products ... Call

EAGLE TREE
- Butcher 2.0 ... $ 25

EIDERSOFT
- Amiga Karate ... $ 24
- New! Ethos Casino Fever ... $ 32
- New! Pro Sound Designer ... Call

EPYX
- California Games ... $ 29
- Destroyer ... $ 29
- Dive Bomber ... $ 29
- 4x4 Off Road Race ... $ 29
- Rogue ... $ 25
- Street Cat ... $ 19
- Sub Battle ... $ 29
- Summer Games ... $ 25
- Temples of Apshai ... $ 25
- World Games ... $ 25

EQUAL PLUS
- Financial Plus ... $188

ESCAPE SEQUENCE
- Photosynthesis ... Call

FINALLY TECHNOLOGIES
- Animotion ... $ 74
- Dr. Xes ... $ 37
- Nancy ... $ 45
- Phasar ... $ 61
- Senor Tutor ... Call
- Talker ... $ 46

FIREBIRD
- New! Black Lamp ... $ 19
- New! Carrier Command ... $ 33
- New! Enlightenment ... $ 19
- Guild of Thieves ... $ 32
- Golden Path ... $ 35
- Jewel of Darkness ... $ 25
- Jinxter ... Call
- Knight Orc ... $ 34
- Pawn ... $ 32
- Silicon Dreams ... $ 25
- StarGlider ... Call
- New! StarGlider II ... Call
- New! Univ. Military Simul. ... Call

FIRST BYTE
- 1st Letters & Words ... $ 36
- First Shapes ... $ 34
- Kid Talk ... $ 34
- Math Talk ... $ 34
- Math Talk Fractions ... Call
- Smoothtalker ... $ 36
- Speller Bee ... $ 34

FIRST ROW
- New! Prime Time ... Call
- New! Twilight Zone ... Call

FREE SPIRIT
- Ultimate DOS Util's ... $ 46

FULLER COMPUTER
- Project D ... $ 37

FUTUREWORKS
- LexCheck ... $ 34

GIMPEL
- Lint ... $ 85

GOLD DISK
- Comic Setter ... $ 74
- Font Set 1 ... $ 26
- Gold Spell ... $ 34
- Laser Script ... $ 35
- Page Setter ... $ 94
- Prof. Page Setter ... Call

HAITEX
- New! A-Drums ... Call
- HaiCalc ... $ 44

HASH
- New! Animation Effects ... $ 35
- New! Animation Stand ... $ 35
- Animator Apprent. ... Call
- Animator Appr. Jr. ... Call
- Animator Flipper ... $ 29
- Shape Libraries ... Call

HILTON ANDROID
- Aesop's Fables ... $ 19
- Chicken Little ... $ 19
- Little Red Hen ... $ 19
- Three Little Pigs ... $ 19
- New! Ugly Duckling ... $ 22

HYPERTEK
- GOMF ... Call

IMPULSE
- Diamond ... Call
- Prism ... $ 49
- Silver ... $119

INFINITY
- Galileo II ... Call
- Go ... Call
- Grand Slam Tennis ... $ 38
- Hot Licks ... $ 37
- Shakespeare ... Call

INNOVISION
- Video Effects 3D ... $142

INOVATRONICS
- CAPE 68K ... Call
- InovaTools 1 ... Call
- Power Windows ... $ 65

INTELLIGENT MEMORY
- Emmetic Skimmer ... $ 27
- Galaxy Fight ... $ 35
- Garrison ... Call
- Garrison II ... Call
- Mousetrap ... $ 22
- Witchcraft ... $ 35
- Turboprint ... $ 38

INTERACTIVE SOFTWORKS
- Calligrapher ... $ 79
- Newsletter Fonts ... $ 25
- Studio Fonts ... $ 25

ISM
- Surgeon ... $ 39

JAGWARE
- Alien Fires ... Call

JDK IMAGES
- Pro Video CGI ... Call
- Pro Video Plus ... Call
- Font Library 1 ... $ 79
- Font Library 2 ... $ 79

JENDAY
- Conv. w/Comp. ... $ 24

JHM
- Talking Color Book ... $ 24

KARA
- Kara Fonts ... $ 54

KFS
- The Accountant ... $199

KINGSOFT
- New! City Defense ... $ 16
- Emerald Mines ... $ 18
- Flip Flop ... $ 15
- New! Fortress Underground ... $ 16

KONAMI
- New! Boot Camp ... $ 31
- New! Contra ... $ 31
- New! Jackal ... $ 31
- New! Rush'n Attack ... Call

LAKE FOREST LOGIC
- New! Disk Mechanic ... $ 67

LAMPLIGHTER SOFTWARE
- Amix ... Call
- dbProfessional ... Call

LATTICE
- New! Amiga C++ ... Call
- C – Regular ... $163
- C – Professional ... $284
- dbC III Library ... $119
- Other Products ... Call

LIGHTNING SOFTWARE
- Big Picture ... Call

LION'S AMIGA ART STUDIO
- Font Sets 1 & 2 ... $ 25
- Newsletter Fonts ... $ 25

LYNN'S LUNA C
- WBExtras ... $ 25

MAGIC BYTES
- New! Pink Panther ... $ 34

MAXIS
- New! Sky Chase ... Call

MANX
- Aztec C – Devel. ... $199
- Aztec C – Prof. ... $149
- Library Source ... Call
- Source Levl Debug'r ... Call

MASTERTRONIC
- Fued ... $ 18
- Ninja Mission ... $ 18
- Space Ranger ... $ 18

MERIDIEN SOFTWARE
- Demonstrator ... $ 27
- Zing ... $ 49
- Zing Keys ... $ 36
- Zing Spell ... $ 38

METACOMCO
- Assembler ... Call
- Lisp ... $154
- Make ... $ 57
- Pascal ... $ 68
- Shell ... $ 45
- Toolkit ... $ 35

METADIGM
- MetaScope ... $ 79

MICHTRON
- Air Ball ... $ 28
- Cashman ... $ 24
- Karate Kid II ... $ 28

MICRODEAL
- Gold Runner ... $ 28
- Insanity Flight ... $ 29
- Slaygon ... $ 29
- Time Bandits ... $ 28

MICRO ILLUSIONS
- Black Jack Acad. ... $ 29
- CAD System ... Call
- Discovery Data Disks ... *Now Available!*
- Dynamic Word ... $139
- Discovery ... $ 25
- EbonStar ... *In Stock!*
- Faery Tale Adv. ... *In Stock!*
- Fire Power ... $ 19
- Galactic Invasion ... $ 19
- Land of Legends ... $ 37
- Music X ... $219
- Photon Paint ... *In Stock!*
- Photon Video ... Call
- Planetarium ... $ 51
- Romant. Encounter ... $ 29
- Turbo ... $ 19

MICRO MAGIC
- Forms in Flight ... Call

MICROPROSE
- Gunship ... $ 28
- Silent Service ... $ 24

MICROSEARCH
- City Desk ... $110
- Desktop Artist #1 ... $ 23
- Head Coach ... $ 39

MICROSMITHS
- TxED Plus ... Call

MICROSYSTEMS SOFTWARE
- Analyze 2.0 ... $ 74
- BBS-PC ... $ 62
- Excellence ... Call
- Flipside ... $ 31
- On-line ... $ 42
- Organize ... $ 63
- Scribble ... $ 61
- Works ... $131

MIDITALK
- TX8EDLIB ... $ 67

MIMETICS
- 3-Demon ... $ 74
- Soundscp Pro Midi ... $130
- Soundscape Util#1 ... $ 39

MINDSCAPE
- Balance of Power ... $ 31
- Block Buster ... $ 37
- Bratacus ... $ 32
- Deja Vu ... $ 32
- Gauntlet ... Call
- Halley Project ... $ 30
- Harrier Combat ... $ 37
- High Roller ... Call
- Ice Hockey ... Call
- Indoor Sports ... $ 35
- Into Eagle's Nest ... Call
- Keyboard Cadet ... Call
- Plutos ... Call
- Q-Ball ... $ 22
- Racter ... $ 28
- SAT Preparation ... $ 52
- Shadowgate ... $ 35
- Uninvited ... $ 31

MINDWARE
- Descartes ... $ 26
- Holmes ... $ 37
- Page Flipper ... $ 39

NEW HORIZONS
- Flow ... $ 69
- ProWrite 2.0 ... $ 75

NEWTEK
- A500 Adapter ... $ 20
- Digi-Adapter ... Call
- Digi-Droid ... $ 74
- Digi-Paint ... $ 49
- Digi-View 3.0 ... Call
- Video Toaster ... Call

NEW WAVE
- New! Amiga Sound Oasis ... Call
- Dynamic Drums ... $ 59
- Dynamic Studio ... $159

NIMBUS
- Accounting ... $ 99

OMNITREND
- Breach ... $ 29
- Breach Scenario ... $ 19
- New! Paladin ... $ 19
- New! Paladin Scenario ... $ 19

ORIGIN SYSTEMS
- AutoDuel ... $ 35
- Moebius ... $ 38
- Ogre ... Call
- Ultima III ... Call
- Ultima IV ... Call

OPCODE SYSTEMS
- Music Mouse ... $ 66

OXXI
- A-Talk II ... Call
- Encore ... $ 29
- Maxiplan ... $ 99
- Maxiplan Plus ... $127
- WOW ... $ 29

PDJ SOFTWARE
- AiRT ... Call

PEACOCK SYSTEMS
- CBTree ... Call

POLYGLOT SOFTWARE
- Crossword Creator ... $ 38
- Dominoes ... $ 19

PROFESSIONAL SOFTWARE
- Fleet Check ... Call

PROGRESSIVE PERIPHERALS
- New! Access 64 ... Call
- CLI-Mate ... $ 25
- New! Disk Master ... $ 40
- Dr. Term Prof. ... $ 79
- IntroCad ... $ 63
- Logistix ... $ 85
- Mathamation ... Call
- MicroLawyer ... Call
- PixMate ... $ 54
- Superbase ... $ 89
- Superbase Prof. ... Call
- Vizawrite ... $ 81

PROLIFIC INC.
- Pro-ASM ... $ 73
- Pro-Board ... Call
- Pro-Net ... Call

PSYGNOSIS
- Arena ... $ 16
- Barbarian ... $ 28
- Deep Space ... $ 21
- Obliterator ... Call
- Terror Pods ... $ 28

READY SOFT
- The 64 Emulator ... Call

RELINA
- Mission Elevator ... $ 38
- SpacePort ... $ 38
- Western Games ... $ 38

RGB VIDEO CREATIONS
- New! Deluxe Help ... Call

RIGHT ANSWERS GROUP
- Director ... Call

SEDONA
- Money Mentor ... $ 74

SEVEN SEAS
- Doug's Math Aquar. ... $ 59

SIS
- C64 Emulator ... Call

SLIPPED DISK
- New! Lotto Magic ... $ 19

SOFT LINK
- Multi Prefs ... $ 23

SOFTGANG
- Final Trip ... $ 18
- Space Fight ... $ 18
- Vader Amiga ... $ 18

SOFT LOGIK CORP.
- Publishing Partner ... Call

SOFT TOUCH
- Custom Screens ... $ 49
- Paymaster Plus ... $109

SOFTWARE ADVANTAGE
- Investor's Advantage ... $ 79

SOFTWARE INTEGRATIONS
- Oriental Desktop Art ... $ 29

SOFTWARE TERMINAL
- Telegames ... $ 26
- Telewars ... Call

SOFTWARE VISIONS
- MicroFiche Filer ... $ 79

SOUNDQUEST
- Patch Editors ... *In Stock!*

SSI
- New! Gettysburg ... $ 42
- Kampfgruppe ... $ 46
- Phantasie ... Call
- Roadwar Europa ... $ 31
- Road War 2000 ... $ 32
- Wrath of Nicodemus ... Call

STAR SOFT
- Stock Market Game ... $ 19

SUBLOGIC
- Flight Simulator ... $ 32
- Jet ... Call
- Scenery Disk #7 ... $ 18
- Scenery Disk #11 ... $ 20
- New! European Scenery ... Call

SUNRIZE INDUSTRIES
- Perfect Vision ... Call
- Studio Magic ... $ 75

SYNDESIS
- Interchange ... Call
- Interch Object Disk ... $ 15

TAURUS
- Acquisition ... Call
- X-CAD Designer ... Call

TDI
- *All Products Available*
- Modula II/Comm. ... $207
- Modula II/Devel. ... $109
- Modula II/Reg. ... $ 64

THE DISC COMPANY
- Kind Words ... $ 74

THE OTHER GUYS
- Match-It ... $ 29
- Omega File ... $ 60
- Promise Spell Checkr. ... $ 39
- Reason ... Call
- Synthia ... Call

THREE SIXTY SOFTWARE
- Dark Castles ... $ 24

TIGRESS
- Diskwik ... $ 36

TITUS
- Crazy Cars ... Call

TOP DOWN
- FootMan ... Call
- Vyper ... $ 24

TRUE BASIC, INC.
- True Basic ... $ 74
- 9 Libraries (each) ... $ 39
- Runtime ... $109

UNICORN
- Adv. of Sinbad ... $ 35
- Aesop's Fables ... $ 35
- Animal Kingdom ... $ 35
- Arabian Nights ... $ 35
- Decimal Dungeon ... $ 33
- Fraction Action ... $ 33
- Kinderama ... $ 33
- Logic Master ... $ 35
- Magical Myths ... $ 35
- Math Wizard ... $ 35
- Read & Rhyme ... $ 33
- Read-A-Rama ... $ 35
- The Word Master ... $ 35

UNISON WORLD
- Art Gallery I, II ... $ 20
- Printmaster Plus ... $ 33

VIP TECHNOLOGY
- Professional ... $114

VISUAL AURAL
- Mindlight 7 ... Call

WESTCOM
- ADFO ... $ 45
- Hardhat ... $ 55

WILLIAM HAWES
- New! ARexx ... $ 39
- New! WShell ... $ 39

WORDPERFECT INC.
- WordPerfect ... Call
- WordPerf. Library ... Call

ZEN SOFTWARE
- System Monitor ... $ 39

ZIRKONICS
- Prof. Text Engine ... $ 80

Our objective is to carry every product for the Amiga — and sell them at the best prices. We call only Amiga products, so there's no need to specify. New products come in daily — please call for latest prices and availability. Our policy is to be as competitive as possible on all product prices. If you find a lower price, give us a call.

Orders Only: **800-BE-AMIGA**™

In California: **800-843-2842**

Customer Service: **415-322-0686**

Telex: 981975 ab:GO AMIGO *FAX:* 415-322-5356 *EasyLink:* 62044782

MasterCard VISA

Send Mail Orders to: **GO AMIGO** 508 Waverley St., Palo Alto, CA 94301
(Money Order, Cashier's Check, or Qualified P.O. only. CA residents add sales tax.)

SHIPPING INFO: Software Shipping rates are $2.50/item using UPS Ground service (max. $7.50) or $4.50/item using UPS 2nd Day Air Service (max. $13.50). Other shipping methods available. Call for hardware rates. APO, Mail, foreign shipping extra. Call for more info. **RETURN & REFUND POLICY:** All returns must have an RMA-#. Call Customer Service to request an RMA-#. Defective merchandise under warranty will be repaired or replaced. Returned product must be returned postage prepaid with all original packaging. We do not offer refunds for defective products or for products that do not perform satisfactorily. We make no guarantees for product performance. Any money back guarantees must be handled directly with the manufacturer. **OTHER POLICIES:** We do not charge your card until the product actually ships. Purchase order customers must have credit application on file. No surcharge for VISA and MasterCard. When ordering with credit card, *PLEASE* include expiration date and name of bank! Call Fridays for unannounced specials.

Amiga is a trademark of Commodore-Amiga. Go Amigo is in no way associated with Commodore-Amiga.
Delivery subject to product availability • Prices subject to change •

THE THREE STOOGES

Cinemaware
Amiga with 512K
Two disks; $49.95

Larry, Moe, and Curly live again through the magic of the home computer! This electronic board game, with arcade sequences drawn from their movies, is a sheer delight for anyone who has ever laughed at these three sovereigns of slapstick comedy.

The game's plot is pure, undiluted stooge. Fleecem, of Skin and Flint Finance Corp., will tear down the town's orphanage unless Ma comes up with all the money she owes in 30 days. The boys generously offer to help the old woman scrape up the dough. Their resolve to help is strengthened when her three lovely daughters promise to marry them if they pay the debt, repair the orphanage, and accumulate a little extra cash for future emergencies.

The boys raise money by walking the one-way streets of Stoogeville and finding various odd forms of employment. Naturally, each job involves the zanies in an action contest.

The movement system is quite novel. A row of six icons appears above Moe's head, each representing one of the next six squares along the street. Moe's hand automatically moves from square to square until the player pushes the button to stop it or the two-second time limit expires. The Stooges automatically move to the spot that is indicated by the hand. The program transfers the player to the designated spot, where the participant follows the onscreen directions.

The Slapping Game, in which Moe attempts to pound sense into his cohorts, can slow down the movement of the hand to make choosing easier. This enables players to orchestrate movement to specific types of squares. It's handy for avoiding games which the computerist finds especially hard.

The mousetraps, on the other hand, are penalty squares. If a trap snaps on the Boss Stooge's hand, the boys stay where they are and lose a precious day. If the pesky traps take all of Moe's fingers, the game is over.

Trivia gives Three Stooges scholars the chance to parade their knowledge of the team's career, players find cash on "Money" squares, "Chance" introduces unexpected consequences, and the Evil Banker dishes out penalties which start at losing a day.

There are four money-making games:

Pie Fight tests the player's ability to turn a fancy dinner into a shambles. The joystick allows each of the Stooges to duck and throw pies individually. The game proceeds, with the player earning money for hitting guests, until they have taken five "hits." If the Stooges throw all of the pies before this happens, it doubles all money earned.

Featured This Month:



Jet: *combat-heavy flight simulator. READER SERVICE NO. 202*

Hospital is a high-speed driving contest. The player steers three midget race cars, lined up like a train, through crowded hallways to the operating room before time expires. Collecting items



Lengthy noninteractive sequences give **The Three Stooges** *an "at the movies" feel. The fine graphics manage to capture the essence of the classic slapstick shorts. READER SERVICE NO. 201*





AAM-S-88

Order Toll Free
800-558-0003
WI orders and Information
414-357-8181

SINCE 1982
ComputAbility

Amiga Hardware
Amiga 500 Computer .... CALL
Amiga 1010 Disk Drive . CALL
Amiga 501 Ram Exp. .... CALL
Amiga 1084 Monitor ...... CALL

Hard Drives
Phoenix 20 Meg PHD28 .... 599.00
Phoenix Power Supply for 500 .... 74.95
Supra 20 Meg for A-500 .... 689.00
Supra 20 Meg for A-1000 .... 669.00
Supra 30 Meg for A-1000 .... 819.00

Modems
Avatex 1200 HC 109
Avatex 2400 HC 169
Supra 2400 155

Modem Packages
SPECIAL This package includes your choice of modem, your choice of Diga or Online software, and a cable.
Avatex 1200 HC 159
Avatex 2400 HC 219
Supra 2400 199

Printers
PANASONIC
1080i - II NEW 179
1090i - II NEW 199
1092I 319
1592 409
1595 469
3131 309
3151 479
1524 579
4450 Laser New 1679

MIDI KEYBOARD SPECIAL
Casio HT-700 MIDI & PCM and ECE - MIDI Interface 500 or 1000...$215

Printers
STAR
NX1000 175
NX1000 Rainbow *NEW* 239
NX15 309
ND15 399
NR15 479
NB24/10 439
NB24/15 639
LASER 8 *NEW* 1795

VIDEO
Camcorders and Video Decks by : JVC, Panasonic, Sony, Canon, Chinon, Quasar, RCA, Akai, NEC, Hitachi, Sharp & More

AMIGA SOFTWARE

A.B. SOFT
A/C Basic 124.95
A/C Fortran 179.95
ABACUS
Assem Pro 64.95
Becker Text 92.95
Data Retrieve 49.95
Text Pro 49.95
ACADEMY
Typing Tutor 20.95
ACCESS
Famous Courses Disks 1,2,3 ..... 14.95
World Class Leader Board 28.95
ACCOLADE
Graphics Studio 34.95
Hardball 26.95
Mean 18 .... 26.95
Test Drive 26.95
ACTIONWARE
Capone 24.95
Creature 24.95
P.O.W 24.95
ACTIVISION
Gee Bee Air Rally 25.95
Music Studio 2.0 .... 49.95
Shanghai 25.95
AEGIS
Animator 81.95
Arazok's Tomb 24.95
Audio Master 34.95
Diga 48.95
Draw Plus 149.95
Images 23.95
Impact 52.95
Modeler 3D 87.95
Ports of Call 28.95
Sonix 48.95
Video Titler 84.95
VideoScape 3D 114.95
AMIGA BUSINESS SYS.
KickWork 19.95
ANCO
Challenger 16.95
Grid Start 16.95
Jump Jet (Harrier) 16.95
Karting Grand Prix 16.95
Sky Fighter 16.95
ARTWORX
Bridge 5.0 .... 21.95
Data Disk #4 .... 14.95
Data Disk #5 .... 14.95
Strip Poker 25.95
Thai Boxing 11.95
ASDG
Facc II 21.95
BANTAM
Amiga Dos Express 19.95
BAUDVILLE
Video Vegas 21.95
BULLFROG PROD
ADrum 49.95
BYTE BY BYTE
Animate 3-D 87.95
Sculpt 3-D 59.95

CAPILANO COMPUTING
Logic Works 64.95
CDA
Lex Check 27.95
CENTRAL COAST SOFT
Disk 2 Disk 28.95
Dos 2 Dos 31.95
Precisely 48.95
Quarter Back 42.95
CINEMAWARE
Defender Of The Crown ... 31.95
King Of Chicago 31.95
Rocket Ranger 31.95
S.D.I. 31.95
Sinbad 31.95
Three Stooges 31.95
CLASSIC COMPU
Diablo 19.95
COMMAND SIM.
Blitzkreig at Ardennes 32.95
CONSTELLATION SOFT.
Emerald Mine 14.95
Karate King 14.95
Larrie 14.95
Mission Elevator 14.95
COSMI
Def Con 5 .... 18.95
Super Huey 18.95
CREATIVE SOLUTIONS
Multi-FORTH 56.95
CRYSTAL ROSE
ANALYTIC ART 36.95
DIGITAL CREATIONS
Gizmos 42.95
LPD Filer 69.95
LPD Planner 69.95
LPD Writer 69.95
DIGITEK
Amegas 22.95
Drum Studio 31.95
Holywood Poker 22.95
Thunderboy 22.95
Vampire's Empire 28.95
DISKOVERY
Amnix 31.95
Arkanoids 31.95
DX Deries 31.95
Grabbit 19.95
Key Genie 31.95
Marauder II 25.95
EASWARE
Home Designer's CAD ... 122.95
EIDERSOFT
Amiga Karate 22.95
ELECTRONIC ARTS
Aaargh 23.95
Adventure Const. Set 14.95
Alien Fires 26.95
Alternate Reality : City 26.95
Arctic Fox 26.95
Awesome Arcade Pack 32.95
Bard's Tale 32.95
Battle Droidz 23.95
Black Cauldron 26.95
Chessmaster 2000 .... 29.95

Deluxe Music Const. Set 2.0 .... 61.95
Dlx Paint 2 .... 84.95
Dlx PhotoLab 61.95
Dlx Print II 51.95
Dlx Productions 129.95
Dlx Video V1.2 .... 84.95
Donald Duck's Playground 17.95
Earle Weaver Baseball 32.95
Empire 32.95
FA/18 Interceptor 32.95
Ferrari Formula One 32.95
First Letters And Words .. 32.95
First Shapes 32.95
Gridiron 38.95
Hot and Cool Jazz 20.95
Hunt For Red October 32.95
Instant Music 32.95
Intellitype 32.95
It's Only Rock And Roll ... 20.95
Kid Talk 32.95
Leisure Suit Larry 32.95
Mad Libs 14.95
Marble Madness 32.95
Math Talk 32.95
Math Talk/ Fractions 32.95
Mavis Beacon Typing 29.95
Mother Goose 20.95
One on One Basketball 14.95
Police Quest 32.95
Pub Games 23.95
Reach For The Stars 26.95
Return To Atlantis 32.95
Road Wars 23.95
Rockford 23.95
Sky Fox 14.95
Sky Fox II 26.95
Smooth Talker 32.95
Space Quest 32.95
Space Quest II 32.95
Speller Bee 32.95
Star Fleet I 36.95
Thexder 23.95
Winnie The Pooh 17.95
EPYX
4 x 4 Off Road Racing 23.95
California Games 23.95
Destroyer 23.95
Dive Bomber 23.95
Street Cat 16.95
Streets Sports Basketball 23.95
Sub Battle Simulator 23.95
Temple of Apshai Trilogy 14.95
Winter Games 14.95
World Games 23.95
EQUAL PLUS
Financial Plus 174.95
ERYSIAN SOFTWARE
Carlos Monte's Black Jk. . 18.95
FELSINA SOFTWARE
A Talk Plus 46.95
FINALLY SOFTWARE
Phaser 59.95
FIREBIRD
Golden Path 28.95
Guild Of Thieves 28.95
Jewel of Darkness 19.95

Pawn, The 28.95
Star Glider 28.95
FULLER COMP. SYS.
Project D+ Backup 28.95
GAMESTAR
Championship Baseball ... 25.95
GBA Champ. Basketball .. 28.95
GFL Champ. Football 28.95
GIMPLE SOFTWARE
Lint 59.95
GOLD DISK
Comic Setter 59.95
Gold Spell 28.95
Laser Script 26.95
Page Setter 84.95
Professional Page 229.95
GRAFOX
Logistics 92.95
HASH ENTERPRISES
Animator Apprentice 174.95
HAYDEN SOFTWARE
Sargon III 31.95
IMPULSE
Prism 42.95
Silver 99.95
INFINITY
Galileo II 42.95
Grand Slam Tennis 28.95
Shakespear 129.95
INNOVATRONICS
Inovatools I 46.95
Power Windows II 52.95
INTERACTIVE SOFT.
Calligrafonts 36.95
Calligrapher 74.95
ISM, INC.
Surgeon, The 28.95
J.D.K. IMAGES
Pro Video CG I 114.95
PV Plus 177.95
KARA GRAPHICS
Kara Fonts 49.95
LATTICE
Lattice C 129.95
Lattice C Professional ... 217.95
MANX
Aztec C (Dev) 179.95
Aztec C (Pro) 122.95
Source Level Debugger ... 47.95
MERIDIAN
Zing 46.95
Zing Keys 28.95
METACOMCO
Amiga Pascal 64.95
Amiga Shell 44.95
Amiga Toolkit 31.95
Cambridge Lisp 122.95
Macro Assembler 64.95
METADIGM
Metascope Debugger 61.95
MICRO ILLUSIONS
Black Jack Academy 25.95
Dynamic CAD 294.95
Ebonstar 25.95
Faery Tale 31.95

Fire Power 17.95
Galactic Invasion 17.95
Land of Legends 31.95
Music - X 179.95
Photon Paint 64.95
Photon Video : Cell Animator 92.95
Photon Video : Transport Cntrlr 179.95
Planetarium 44.95
Romantic Encounters @ Dome 25.95
Turbo 17.95
MICRO MAGIC
Forms In Flight 46.95
MICRO SEARCH
Head Coach 28.95
MICRO-SYSTEMS SOFT.
Analyze 59.95
On Line 42.95
Scribble 46.95
Works, The 114.95
MICRODEAL
Gold Runner 25.95
Leatherneck 25.95
Major Motion 25.95
Time Bandit 25.95
MICROPROSE
Silent Service 25.95
MIMETICS
Pro MIDI Studio 92.95
MINDSCAPE
Balance of Power 31.95
Blockbusters 25.95
Deja Vu 31.95
Gauntlet 31.95
Harrier Combat Simulator 31.95
Indoor Sports 31.95
Into The Eagle's Nest 25.95
Master Type 25.95
Perfect Score 49.95
Plutos 19.95
Q-Ball 19.95
Racter 28.95
Shadowgate 31.95
Superstar Ice Hockey 31.95
Uninvited 31.95
MINDWARE
Descartes 20.95
Pageflipper Plus 87.95
NEW HORIZONS
Flow 59.95
Pro Write 72.95
NEW WAVE SOFTWARE
Dynamic Drums 46.95
Dynamic Studio 114.95
NEWTEK
Digipaint 38.95
Digiview 114.95
NORTHEAST SOFTWARE GROUP
Order 28.95
OMNITREND
Breach 24.95
Breach Scenario Disk 16.95

ORIGIN SYSTEMS
Autodual 31.95
Moebius 38.95
Ogre 31.95
Ultima III 25.95
Ultima IV 38.95
OTHER GUYS, THE
Match It 25.95
Synthia 64.95
OXXI ....
Maxi-Plan Plus 114.95
PAR SOFTWARE ....
Express Paint 64.95
PECAN SOFTWARE
Modula 2 .... 64.95
POLYGLOT
Dominoes 16.95
PRECISION SOFT.
SuperBase 87 95
SuperBase Professional 199.95
PROFESSIONAL SOFT.
Fleetcheck 24.95
PROGRESSIVE PERIPH.
CLI-Mate 24.95
Disk Master 28.95
Dr. Term Pro 59.95
IntroCAD 46.95
Math-Amation 59.95
PSYGNOSIS
Arena 13.95
Barbarian 24.95
Deep Space 18.95
Obliterator 24.95
Terrorpods 24.95
RAINBOW ARTS
Garrison II 31.95
RGB VIDEO
Deluxe Help for Digi- Paint 20.95
Deluxe Help for Dlx Paint 20.95
RIGHT ANSWERS GROUP
Director, The 42.95
RSN
Saf-T-Net 28.95
SEDONA SOFTWARE
Money Mentor 56.95
SNAKE DESIGN SOFT.
Witchcraft 31.95
SOFTGANG
Final Trip 14.95
Vader 14.95
SOFTTOUCH
Custom Screen 42.95
SOFTWARE ADVANTAGE
Investors Advantage 59.95
SOFTWARE TERMINAL
Telegames 20.95
Telewars 24.95
SOFTWARE VISIONS
Microfiche Filer 59.95
SOFTWOOD COMPANY
Softwood File II 59.95
Write and File 59.95
STARSOFT DEVELOP.
Santa Paravia 19.95

Stock Market 17.95
STRATEGIC SIM.
Gettysburg 38.95
Kampfgruppe 38.95
Phantasie 25.95
Phantasie III 25.95
Roadwar 2000 .... 25.95
Roadwar Europa 28.95
SUB LOGIC
Flight Simulator II 33.95
Jet 33.95
Scenery Disk #11 .... 18.95
Scenery Disk #7 .... 18.95
SUNRISE INDUSTRIES
Desk Top Artist 18.95
Studio Magic 59.95
Home Inventory 20.95
Mail-It 20.95
Video Cataloger 20.95
SYNDESIS
Interchange 31.95
TAURUS
Aquisition 174.95
X-CAD 349.95
TDI SOFTWARE
Modula 2 (commercial) 179.95
Modula 2 (developer) 92.95
Modula 2 (reg) 64.95
THREE-SIXTY
Dark Castle 26.95
THUNDER MOUNTAIN
Winter Challenge 11.95
TOP DOWN DEVELOPMENT
Footman 18.95
Vyper 18.95
UNICORN
Adventures of Sinbad 28.95
Aesop's Fables 28.95
All About America 36.95
Animal Kingdom 28.95
Decimal Dungeon 28.95
Fraction Action 28.95
Kinderama 28.95
Magical Myths 28.95
Math Wizard 28.95
Read and Rhyme 28.95
Read-A-Rama 28.95
Tales of the Arabian Knights 28.95
Word Master 28.95
UNISON WORLD
Art Gallery I 20.95
Art Gallery II 20.95
Fonts and Borders 20.95
Printmaster Plus 28.95
VIP TECHNOLOGES
VIP Professional 59.95
WESTCOME INDUSTRIES
Hard Hat 42.95
WORDPERFECT CORP
WordPerfect 199.95
ZUMMA GROUP
TV Show 59.95
TV Text 59.95

Order Toll Free
800-558-0003
WI orders and Information
414-357-8181

SINCE 1982
ComputAbility

VISA

No Surcharge on MasterCard or Visa

Master Card

ORDERING INFORMATION: Please specify system. For fast delivery send cashier's check or money order. Personal and company checks allow 14 business days to clear. School P.O.'s welcome. **C.O.D. charges are $3.00.** In Continental USA include $3.00 for software orders 5% shipping for hardware minimum $5.00. MasterCard and Visa orders please include card #, expiration date and signature. WI residents please include 5% sales tax. HI, AK, FPO, APO, Puerto Rico and Canadian orders, please add 6% shipping. **Minimum $6.00. All other foreign orders add 15% shipping, minimum $15.00.** All order shipped outside the Continental U.S.A are shipped first class insured U.S. mail. If foreign shipping charges exceed the minimum amount, you will be charged the additional amount to get your package to you quickly and safely. All goods are new and include factory warranty. Due to our low prices all sales are final. All defective returns must have a return authorization number. Please call (414)357-8181 to obtain an RA# or your return will not be accepted Prices and availability subject to change without notice.

Reader Service No. 211

dropped off the nurse's cart is worth $5-$15.

Curly stars in the Cracker-Eating Contest, drawn from the 1941 short "Dutiful But Dumb." The idea is to move the spoon over a cracker and scoop it up when it rises to the top of the stew. The player receives $10 per cracker, $50 per bowl.

Boxing takes place entirely outside the ring. Moe enters Curly in a match, but the big goof only fights hard when he hears "Pop Goes the Weasel." Larry has to race across town, jumping over and running around objects, and return with the violin before the end of the bout.

Although the games become progressively more difficult as the player walks through Stoogeville, they are entertaining rather than challenging. This is appropriate to Cinemaware's design philosophy, which stresses the interactive experience more than mental and physical testing.

The graphics capture the essence of The Three Stooges. Relatively lengthy non-interactive sequences create the proper "at the movies" feel. The illustration and animation during the actual games is also wonderful. This is the type of program which people show to their friends when they brag about the power of the Amiga.

An excellent article about the comedy team highlights the documentation by Bill Kunkel. Those who want to do well at "Trivia" should read the piece very carefully. The tiny rules section is sufficient in light of their simplicity.

The Three Stooges is clearly the best game Cinemaware has produced so far. It has the most enjoyable games, though improvement in this area is still possible, and the best audiovisual effects. Visit Stoogeville at your earliest opportunity.

Cinemaware, 4165 Thousand Oaks Blvd., Westlake Village, CA 91326 (phone: 805-495-6515). *—Arnie Katz*

JET
SubLOGIC
Amiga with 512K
Disk; $49.95

Jet is the logical next step to follow SubLOGIC's classic best seller, *Flight Simulator II.* The earlier program put the user in control of a Cessna 182 or a Gates Learjet, both small, private aircraft. *Jet,* on the other hand, places the computer pilot in the cockpit of either an F-16 Fighting Falcon or a carrier-based F-18 Hornet, both highly specialized, state of the art combat jets.

The World War I dogfight scenario in *FS II* was an attractive bonus; the real thrill was mastering and experiencing the simple joys of artificial flight. Combat jets, on the other hand, are not built for Sunday sightseeing, though the views are definitely spectacular enough to merit the occasional joyride.

Jet is concerned primarily with air-to-air and air-to-ground combat, which it provides in abundance. F-16 and F-18 pilots are offered two types of air-to-air missiles (AIM-9 Sidewinder and AIM-7 Sparrow), two varieties of air-to-ground, or target strike armament (AGM-65 Maverick and MK-82 Smart Bomb), and an M61 Machine Gun. These weapons are selected and loaded onboard the user's jet fighter according to weight.

Jet's variety of flight options include computer demo, free flight, dogfight, target strike, and combination dogfight/target strike modes. There's even a multiplayer dogfight scenario for head-to-head combat on a pair of nearby computers (using SubLOGIC's own serial cables, which can be ordered separately) or via modem.

Jet isn't all combat, however. It's also a first-rate flight simulator that realistically recreates the experience of jet flight. Ironically, users who were intimidated by the complexity of *FS II* will be pleasantly surprised by how easily these craft fly. *Jet,* like the real planes it simulates, has all manner of computerized instruments and targeting aids, and all of these make for easier control.

The keyboard is a labyrinth of commands, but use of the mouse or a joystick transfers most of the details of flight control away from the keys. This frees it for weapon selection and firing, and alternate visual displays.

The playscreen features a primary visual display (with optional secondary and map display available) and the HUD (Heads Up Display). The HUD borders the primary or "3-D" display on all four sides and includes an airspeed indicator, frame load (the force exerted on the aircraft perpendicular to the wing surface), fuel, thrust, throttle, altimeter, clock, compass, and ADF (Automatic Direction Finder) and DME (Distance Measuring Equipment) gauges. The player's score is also there. This seems somewhat at odds with the realism engendered by the rest of this simulation, and would have been more welcome at the conclusion of a flight.

Weapons are selected by simply toggling to the desired type of ordnance and firing.

Optional HUD items include the range circle, a targeting device, and the attitude indicator which shows the jet's orientation in relation to the ground. The attitude indicator can be toggled on/off and consists of a series of parallel onscreen lines tilted at an angle corresponding to the jet's current banking status. This may cause some initial problems for computer pilots used to the more conventional type of attitude indicator, which is framed by a circle and appears as part of the HUD rather than being superimposed over the primary display.

Despite its emphasis on combat, *Jet* also delights the visual senses with its spectacular scenery. The Amiga's powerful graphics capabilities enabled creators Chris Green and SubLOGIC founder Bruce Artwick to produce a continuous, fully scrolling landscape dominated by eye-popping geographical and man made landmarks. Mountains, rivers, forests, power plants, a shipyard, and an enemy base are among the standout visuals included on this basic program. But that's only the beginning of the world tour, since *Jet* also interferes with existing *FS II Scenery Disks.*

Jet provides users with a wide variety of visual perspectives, including multidirectional internal and external views. The program offers eight different points of view from within the jet as well as an outside look at the player's aircraft from either the airbase tower or a second, "spotter" plane.

The only disappointment is the lack of kinetic combat graphics. Crashes and air explosions are disappointingly perfunctory. We never see a wounded aircraft screaming to earth, for example, flames gushing from its engine. Instead, all fatally damaged aircraft simply disappear.

Still, any complaints here are strict-

MONTGOMERY GRANT

AHOY 8/88

IN NEW YORK & OUTSIDE USA CALL
(718) 692-0071
FOR CUSTOMER SERVICE CALL MON-FRI/ 9:30 AM- 5 PM
(718)692-1148

WAREHOUSE ADDRESS: 33 34th ST. BROOKLYN, NY, 11232

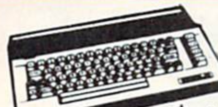
FOR ORDERS & INFORMATION CALL TOLL FREE

1-800-345-7058

OPEN 7 DAYS A WEEK FOR ORDERS: MONDAY-FRIDAY 9 AM-8 PM / SATURDAY & SUNDAY 9:30 AM-6 PM EDT

OR WRITE TO:
MONTGOMERY GRANT
MAIL ORDER DEPT.
P.O. BOX 58
BROOKLYN, N.Y., 11230
FAX NO. 2125641497
TELEX NO. 422132HMOLLER

commodore — apple — LEADING EDGE



C64C With Geos Program! **$149.95**

C128 **$219.95**

NEW C-128D with Built in Disk Drive **$429**

#1700 128K EXPANSION MODULE..........$99.95
#1764 EXPANSION MODULE..........$119.95
XETEC JR. INTERFACE..........$32.95
XETEC SR. INTERFACE..........$52.95
C-128 POWER SUPPLY..........$39.95
C64/C64-C POWER SUPPLY..........$29.95
XETEC SUPER GRAPHIC GOLD..........$84.95
COMMODORE MOUSE..........$26.88
XETEC Lt. KERNEL 20 MB HARD DRIVES FOR
C64-C..........$749
C-128..........$799

commodore DISK DRIVES



1541/C $149.95
1571 $199.95
1581 $189.95
1541II $164.95

MONITORS



1802 Color Monitor....$169.95
1084 Color Monitor....$279.95

THOMSON HI-RES RGB COLOR MONITOR..........$299.95
MAGNAVOX RGB 13" COLOR MONITOR..........$199.95

COMMODORE PRINTERS

MPS-1000 $159
MPS-1250 $239
DPS-1101 DAISY WHEEL PRINTER $159

Commodore AMIGA 500



IN STOCK-CALL FOR LOW PRICE!
AMIGA 500 W/1084..........$779
AMIGA 500/1084/1010..........$979

AMIGA 2000 IN STOCK
ALL PERIPHERALS IN STOCK

A-501 512K EXPANSION · A-1010 3.5" FLOPPY DRIVE · A-1020T 5.25" DISK DRIVE WITH TRANSFORMER · A-2088D BRIDGE CARD · A-1084 RGB COLOR MONITOR · A-1680 MODEM · A-1060 SIDECAR · A-2090 HARD DRIVE CONTROLLER FOR A-2000 · A-2010 3.5" INTERNAL DISK DRIVE FOR A-2000 · A-2052 2MB EXPANSION FOR A-2000
SUPRA 20 MB HARD DRIVE FOR A-500..$699

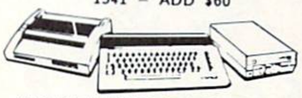
C128 COMPUTER PACKAGES



#1 COMPLETE PACKAGE
COMMODORE 128 COMPUTER
COMMODORE 1541 DISK DRIVE
12" MONITOR
COMPUTER PRINTER

$469 COLOR MONITOR ADD *$110*

TO SUBSTITUTE 1571 FOR 1541 – ADD $60



#2 DELUXE PACKAGE
COMMODORE 128 COMPUTER
COMMODORE 1571 DISK DRIVE
COMMODORE 1902RGB COLOR MONITOR
COMMODORE 1515 80 COL. PRINTER

$659

SPECIAL!
C-128/D DELUXE PACKAGE
C-128 COMPUTER W/ BUILT-IN DISK · 1902 RGB COLOR MONITOR · COMMODORE COLOR PRINTER

$639

C64C COMPUTER PACKAGES



#3 COMPLETE PACKAGE
COMMODORE C-64/C COMPUTER
COMMODORE 1541 DISK DRIVE
COMPUTER PRINTER
12" MONITOR
GEOS SOFTWARE PROGRAM

$349

COLOR MONITOR ADD *$110*

#4 COLOR PACKAGE
COMMODORE C-64C COMPUTER
COMMODORE 1541/C DISK DRIVE
COMPUTER PRINTER
COLOR MONITOR
GEOS SOFTWARE PROGRAM

$478

PACKAGES



· Apple IIC or IIE Computer
· 5.25" Drive · 12" Monitor All Hook-up Cables & Adaptors Package of 10 Diskettes

APPLE IIC **$579** APPLE IIE **$779**

MAC SE..........$1949
MAC SE W/20MB APPLE HARD DRIVE..........$2599
IMAGEWRITER II Printer..........$459
APPLE MAC + PACK..........$1449
APPLE IIGS w/APPLE RGB COLOR MONITOR & 3.5" DISK DRIVE..........$1379

LEADING EDGE

MODEL D PACKAGE
IBM PC/XT COMPATIBLE



512K RAM Computer Keyboard 360K Floppy Drive 4.7-7.16 MHz. 12" Monitor 8088-2 Processor

$729

SAME PACKAGE W/20 MB HARD DRIVE **$989**

PRINTERS

NEC

P-6..........$419.95
P-2200..........$339.95

TOSHIBA

PS-321 SI..........$479.95

EPSON

FX-86E..........$299.95
FX-286E..........$449.95
LQ-500..........$315.95
LQ-800..........$349.95
LQ-850..........$489.95
LQ-1050..........$659.95
EX-1000..........$459.95
LX-800..........$199.95

Panasonic

1080i-II..........$159.95
1092i..........$289.95
1091i/II..........$189.95

star

NX-1000..........$169.95
NX-1000 Rainbow..........$219.95
NX-15..........$289.95
NB-2410..........$409.95
NB 2415..........$539.95

OKIDATA

OKIDATA 120..........$199.95
OKIDATA 180..........$219.95
OKIDATA 183..........$299.95
OKIMATE 20 with Plug n' Print..........$189.95

HP LASERJET SeriesII..........$1629

SANYO PR-3000 DAISY WHEEL LQ PRINTER.....$89.50

BLUE CHIP



IBM PC/XT COMPATIBLE PKG

512K RAM Expandable to 640K 360K Floppy Disk Drive 12" Monitor

$449

SAME PKG. WITH 20 MB HARD DRIVE..........$699
SAME PKG W/ TWO FLOPPY DRIVES..........$499

SEAGATE

20 MB HARD DRIVE W/ CONTROLLER **$269**

40 MB HARD DRIVE & 30 MB HARD DRIVE NOW IN STOCK!

SPECIAL! commodore PC10-1



PROFESSIONAL PACKAGE

PC10-1 Computer 512K Expandable to 640K 360K Disk Drive Enhanced Keyboard Serial & Parallel Ports 12" Monitor All Hook-up Cables & Adaptors Package of 10 Diskettes

$479

SAME PACKAGE W/20 MB HARD DRIVE **$769**

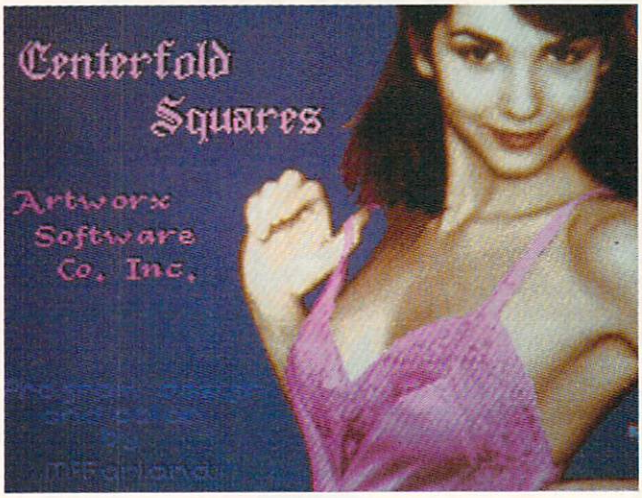
NO SURCHARGE FOR CREDIT CARD ORDERS

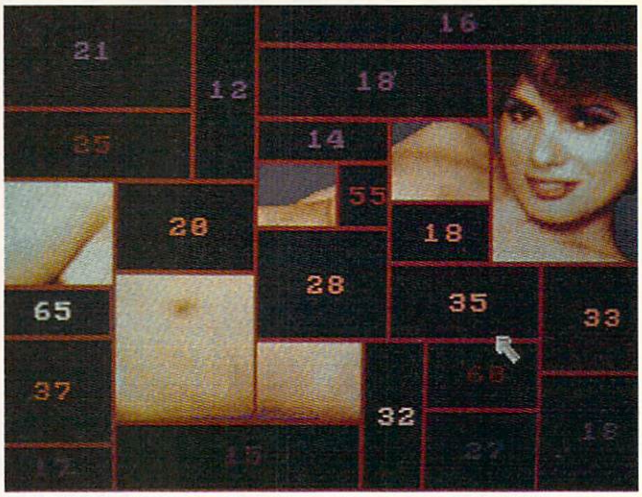
WE INVITE CORPORATE & EDUCATIONAL CUSTOMERS

NO SURCHARGE FOR CREDIT CARD ORDERS

Certified Check, Bank Check, Money Orders, Visa, Am-Ex, Diners Club, Cart-Blanche, Discover Card and C.O.D.s accepted. No additional surcharge for credit card orders. Non-certified checks must wait 4-6 weeks for clearance. N.Y residents add applicable sales tax. Prices and availability subject to change without notice. Not responsible for typographic errors. Return of defective merchandise must have prior return authorization number, or returns will not be accepted. IBM PC/XT are registered trademarks of International Business Machine Corp. All APO/FPO orders are shipped first class priority air. All orders can be shipped Air Express-call for details.

Reader Service No. 183





Bad taste and bad graphics, twin hobgoblins of "adult" computer games, are avoided by **Centerfold Squares.** *A player gets to view the uncensored model by winning a variation of* **Reversi.** *READER SERVICE NO. 198*

ly small-time when compared to the overall impact of this program. *Jet* is the most spectacular air combat simulator ever produced for the Amiga, and seems likely to hold its position for quite some time.

SubLOGIC, 713 Edgebrook Dr., Champaign, IL 61820 (phone: 217-359-8482). *—Bill Kunkel*

CENTERFOLD SQUARES

Artworx
Amiga with 512K
Disk; $29.95

Let's start with a little quiz:

1. Do you play Reversi?
2. Do you enjoy looking at nudes?
3. Are you over 18?

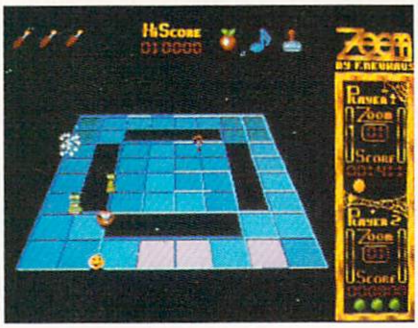
Those who answer "yes" to all three questions have a singular treat in store when they boot *Centerfold Squares*. This solitaire contest for mature computerists is a spicy blend of serious strategizing and lighthearted titillation.

Artworx's *Strip Poker*, published in the early 1980s, remains the most popular "adult" program, but the company's newest effort may usurp that distinction before too long. Not only is the actual game much more interesting, but the graphics in *Centerfold Squares* are a quantum leap ahead of any competing product.

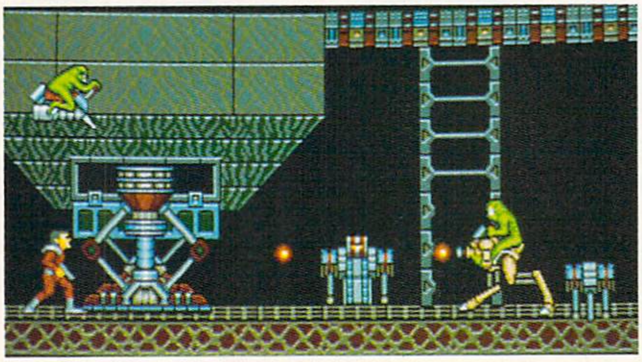
Bad taste and bad graphics are the twin hobgoblins of "adult" computer games. *Centerfold Squares* easily avoids both menaces. The drawings, though undeniably explicit, are certainly not gross. The subject matter is similar to what readers of *Playboy* and other leading men's magazines see each month.

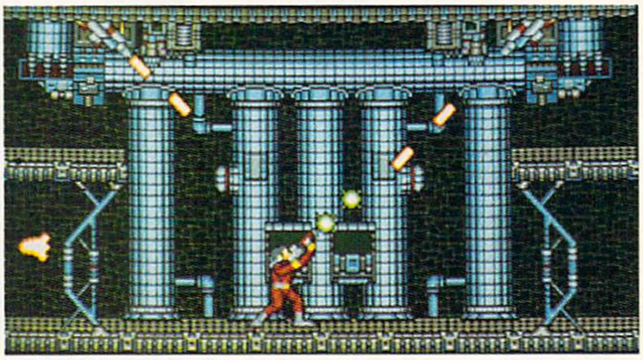
Offensive content, exemplified by past affronts to common decency like *Custer's Revenge,* has proven easier to fix than poor drawing. The simple illustrations found in older adult games inspire little more than smirking laughter. Naming a vaguely humanoid shape "Marilyn Monroe" doesn't really make





ZOOM! *adds zip to a worn concept.*
READER SERVICE NO. 199





The obstacles encountered in **Obliterator's** *100+ separate locations demand split-second reactions. Unfortunately, the program's use of icons will slow you down.* *READER SERVICE NO. 200*

it any sexier to the typical person.

Few computerists will fail to respond to the visual appeal of the ten female and two male models depicted in *Centerfold Squares*. A painstaking digitization process, enhanced by the Amiga's outstanding graphics resolution, produces pictures which are sure to score a bull's-eye with any girl- or boy-watcher. The luminous skin tones, expressive faces, and physical beauty of the models is unimpeachable.

A player earns the right to study these beauties in complete, uncensored splendor by playing a lively variation of Reversi. Winning a game removes one of the opaque blocks over the model's picture and reveals a portion of the body hidden beneath. When the model wins a round, however, one of those pesky blocks returns to cloak a portion of his or her anatomy. When the Amiga owner wins enough rounds to clear away all the blocks, the nude pin-up is fully revealed.

How It Plays

The model selection screen shows the names of all the models on the Game Disk. The program categorizes the 12 models on the roster according to their playing skill: below average, average, and above average. The human player clicks on a name to select a model and confirms the choice with another click on a small picture of the woman or man.

Initially, blocks cover the whole Centerfold Screen. Each has a two-digit number which represents the score needed to remove it. Six vanish immediately to give the computerist a peek at delights to come, but further vistas must be earned before they can be appreciated. One of the remaining blocks flashes, which indicates that it is the prize in the next round of the game.

A 10 x 10 grid serves as the playfield for Double-Up, as designer D. McFarland calls his version of the disk-flipping contest. As in standard Reversi, the participants alternately place counters to surround opposing pieces and change them to the capturing color. A scoreboard on the right shows the players' current totals, the number of points needed to end the round, and the chance box.

Special squares inject a new element into the classic strategy contest. Red squares subtract points, green ones give a scoring bonus, and yellow ones allow the player to take an extra turn. Experienced Reversi hustlers quickly discover that a single red penalty square can wreck a supposedly surefire winning strategy in this variation.

When all else fails, there is Playing Chance. By clicking the row of "???" in the lower left corner of the Double-Up screen, the computerist or model exchanges a turn for a random event. Possible results range from an automatic win or loss to a 20-point scoring bonus or penalty. This injection of a luck factor into an all-skill game may outrage Reversi purists, but seems appropriate for a lighthearted entertainment like *Centerfold Squares*. Who is going to use this program to train for the world championship, anyway?

The only blemish on this otherwise amiable product is the lack of a "save" feature. Since it takes 20 wins or more to reveal some of the centerfolds, it would be nice to be able to temporarily suspend the tournament for continuation on another day.

Centerfold Squares is everything one could expect from an adult computer game. It is pretty, sexy, and fun to play. And just wait until the computerphobe next door says he's never seen anything interesting on a monitor!

Artworx, 1844 Penfield Rd., Penfield, NY 14526 (phone: 716-385-6120).

—Arnie Katz

ZOOM!
Discovery Software
Amiga with 512K
Disk; $29.95

The last time Discovery Software infused new life into a tired out game concept, the result was one of the best selling Amiga programs to date: *Arkanoid*. They've gone to the well once again, and come zooming up with another winner.

ZOOM! is a maze game in which your onscreen character fills in colored squares by surrounding them with a trail he leaves behind. The maze is filled with odd characters he must avoid while sealing off blocks. Of course, we've seen this game in countless variations. What distinguishes this version is its lustrous appearance and blistering speed—possible only on the Amiga.

From the hilarious opening sequence featuring a vaudeville performance by the ball-shaped characters, to the star-filled backdrop that moves behind the 3-D playfield, it is obvious that *ZOOM!* received painstaking attention. The entire program has the look and feel of an underground comic book, its characters delineated with leering mouths, waggling tongues, and bulging, voluptuous detail that makes the game seem faintly obscene. Everything is painted in pastels reminiscent of 60's head films.

The music is outstanding, as are the digitized sound effects. You'll be tapping your feet in a few minutes, though you have the option to turn off the sound if you get tired of it.

There's more than enough strategy to keep the gameplay from becoming routine. There are 50 levels, with different mazes and antagonists at each. The joystick action is not limited to simple *Pac-Man* style maneuvering, either. You can push the fire button to leave obstacles in your trail to slow down pursuers. These "stop rockets" appear as red missiles in the upper left corner. Objects are constantly materializing on the grid. These can be picked up to produce a variety of effects—the characters pursuing you will freeze or slow down, or you'll advance to the next level, or you'll become immunized against collisions for a brief period. Other objects have mysterious properties—you have to pick them up to see what will happen.

ZOOM! may be familiar in form, but it's original and highly satisfying in style and content. We'll settle for two out of three almost anytime.

Discovery Software, 163 Conduit Street, Annapolis, MD 21401 (phone: 301-268-9877).

—Cleveland M. Blakemore

OBLITERATOR
Psygnosis
Amiga with 512K
Price: £24.95 (UK)

Obliterator is a game of the jump, climb, and shoot variety, a distant descendent of *Donkey Kong* and younger sibling to Psygnosis' *Barbarian*. Unfortunately, it does not represent a significant evolution in the field.

Your mission is to wreak as much havoc as possible while exploring an

Continued on page 76

COMPUTER DIRECT

Is 1st In PRICE, SUPPORT, & GUARANTEE!

WE LOVE OUR CUSTOMERS!

Prices Expire 8-31-88

C64c Computer

Includes GEOS (Word Processor & Versatile Drawing Program)



Sale

Our Low Sale Price

$149.95

List $249

(Add $10.00 shipping.*)

AMIGA



Amiga 500 Computer Sale

512K Computer Compatible with Amiga 1000 Software
List $799

Call For Price

Amiga 1010 External Drive Sale

3½" Compact-Size Micro-Disk Drive
List $299

Call For Price

Amiga 1084 Color Monitor Sale

13" RGB 80 Column x 25 Row, 640 x 400 Pixel
List $399

Call For Price

C128D Computer

Includes Full 128 Detached Keyboard & 1571 Drive With 128K Of User Memory Expandable To 640K. 3 Operation Modes (C64, C128 & CP/M, Ver. 3.0) 40/80 Column Output, 16 colors

Free Programmer's Reference Guide

NEW



Our Low Sale Price

$459.95

List $249

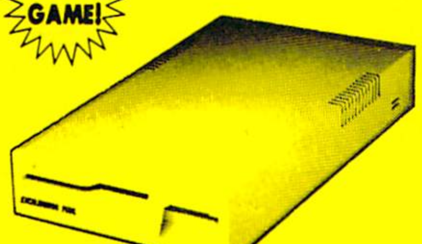
(Add $10.00 shipping.*)

Excelerator Disk Drive

Commodore Compatible

***Includes FREE Game**

FREE GAME!



Our Low Sale Price

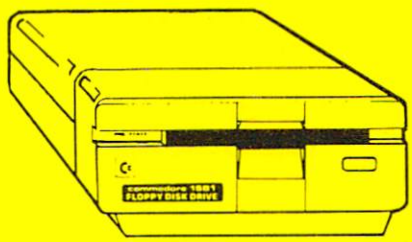
$149.95

List $249

(Add $10.00 shipping.*)

800K 3½" Disk Drive

Commodore 1581 Works With C64/C64c, and C128/C128D. Over 800K Bytes of Formatted Storage On Double-Sided 3.5" Microdiskettes.



Our Low Sale Price

$179.95

List $249

(Add $10.00 shipping.*)

300/1200 BPS External Modem

- 1200 Baud Bell 212A at 1200 or 300 Bits/Sec
- Fully Hayes Compatible
- Automatic Dialing & Answering
- Auto Redial At Receipt Of Busy Signal
- Built-In Speaker With Volume Control
- Built-In Help Commands
- Both Touch Tone and Pulse Dialing
- Uses RS-232 Interface (RS-232 Interface Cable Required

Sale Price $79.95

(Add $3.00 shipping.*)

List $139

300/1200/2400 BPS External Modem

- Fully Hayes Compatible
- Both Tone & Pulse Dialing
- Built-In Speaker With Volume Control
- Command Buffer That Holds Up To 40 Characters
- 2400 Baud Bell 212A At 300, 1200 & 2400 BPS
- Uses RS-232C Interface (RS-232C Interface Cable Required)

Sale Price $159.95

(Add $3.00 shipping.*)

List $249

15 Day Home Trial • 90 Day Immediate Replacement Policy

Call **(312) 382-5050**

We Love Our Customers!

Mail

COMPUTER DIRECT
22292 N. Pepper Road
Barrington, IL. 60010

Reader Service No. 212

COMPUTER DIRECT

Will Not Be UNDERSOLD!

AND WE MEAN IT!*

Prices Expire 8-31-88

Super Hi-Speed 200 CPS Printer

Star Micronics LV-2010 10" Printer With Near Letter Quality



Sale $199.95

(Add $10.00 shipping.*)

List $499

No One Sells This Printer For Less!

- High Speed 200 CPS Draft
- Near Letter Quality
- Tractor and Friction Feed
- Automatic Sheet Feed Loading
- Both Parallel & Serial Interface Ports
- Continuous Underline
- IBM Compatible
- Ultra High-Res Bit Image Graphics

Printing Speed
200 Characters Per Second Draft
45 Characters Per Second NLQ

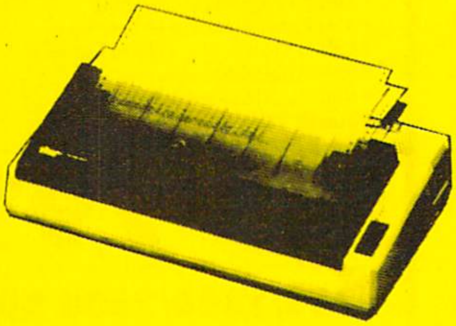
Print Method
Serial Impact Dot Matrix

Print Buffer
16K Bytes

Port
Both Centronics Parallel & Serial Ports

15" High Speed 160 CPS Printer

Splendid Mixture Of High Speed And Near Letter Quality



Sale $229.95

(Add $14.50 shipping.*)

List $499

No One Sells This Printer For Less!

- NLQ and High Draft Speed
- Continuous Underline
- Skip Over Perforation
- IBM Compatible
- Friction and Tractor Feeds
- Both Parallel & Serial Interface Ports
- High Res Graphics Printing

Printing Speed
160 Characters Per Second Draft

Print Method
Serial Impact Dot Matrix

Paper Feed
Sprocket or Friction Feed

Port
Both Centronics Parallel & RS-232 Serial Ports

15 Day Home Trial • 90 Day Immediate Replacement Policy

COMPUTER DIRECT
22292 N. Pepper Rd, Barrington, IL. 60010
Call (312) 382-5050 To Order!

* Illinois residents add 6½% sales tax. All orders must be in U.S. Dollars. We ship to all points in the U.S., CANADA, PUERTO RICO, & APO-FPO. Please call for charges outside continental U.S. or C.O.D. **MAIL ORDERS** enclose cashier check, money order, or personal check. Allow 14 days delivery, 2 to 7 days for phone orders and 1 day express mail. Prices, specifications & availability subject to change without notice. Shipping and handling charges are not refundable. (Monitors only shipped in continental U.S.) **COMPUTER DIRECT** will match any valid nationally advertised delivered price on the exact same product with a comparable payment method (excluding any applicable sales taxes). A physical copy order of the current valid lower priced ad must be supplied with the order, or within 15 days of date of purchase.

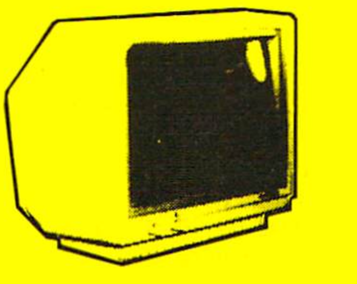
VISA — MASTERCARD — C.O.D.

Reader Service No. 212

COMPUTER DIRECT
Is 1st In PRICE, SUPPORT, & GUARANTEE!
WE LOVE OUR CUSTOMERS!

Prices Expire 8-31-88

12" Monochrome Monitor



- High Resolution
- 80 Column
- 1000 Lines At Center
- Great For Business
- Fantastic Value

Our Low Sale Price
$79.95
List $329
(Add $10.00 shipping.*)

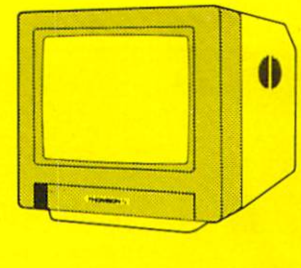
13" Color Composite Monitor



- Anti-Glare Screen
- Audio Speaker
- Volume Control
- Black Matrix Tube
- Horizontal Resolution 260 Lines
- Includes Composite Cable

Our Low Sale Price
$169.95
List $329
(Add $14.50 shipping.*)

13" RGB/Composite Color Monitor

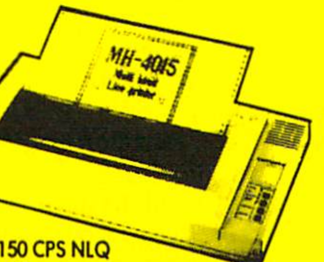


- Black Dot Screen
- 3 Monitors In One - Composite/RGB/80 Column
- Green Screen Only Switch
- Resolution 560 x 240 Pixels

Our Low Sale Price
$219.95
List $399
(Add $14.50 shipping.*)

720 CPS 15" Printer

Multi-Head Wide Carriage Printer With High Dot Resolution



- 720 CPS - 150 CPS NLQ
- 8K Print Buffer
- Print Speed of 228 LPM In Draft
- 6 Print Heads Achieve High Dot Resolution In Higher Speed
- NLQ Speed Of 47.4 LPM
- 136 Column Wide Carriage
- IBM and Epson Mode
- Parallel Centronics Port

Our Low Sale Price
$799.95
List $1995
(Add $14.50 shipping.*)

5¼" Floppy Disks

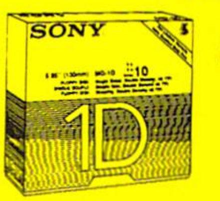
Double Sided Double Density
Minimum Quantity 50
Maximum Quantity 250

19¢ each
(Add $4.00 shipping.*)

Box of 50 .... **$9.50 (19¢ each)**
(without sleeves)
Box of 50............ **$10.50 (21¢ each)**
(with sleeves)
Box of 100 (no limit) ... **$24.00 (24¢ each)**
(with sleeves & labels)

Economy Sleeves .... $1.00 per quantity of 50
Disk Labels .... $3.95 per quantity of 100
Disk Notchers .... $3.95 each

5¼" Sony Disks



49¢ each

Limited Quantities
(Add $4.00 shipping.*)

Single-Sided, Double Density
Sold In Packages Of 5 With Sleeves, Labels & Write Protects Included
$2.45 Per Box

THE VOICE MESSENGER

Speech Synthesizer for the Commodore 64

Features
- Infinite vocabulary
- Built-in software — nothing extra to buy
- Two voices each with intonation; adds character
- Simple BASIC commands for easy programmability
- Doesn't steal RAM from the BASIC workspace
- Won't stop screen action
- Clear, easy to understand speech
- Easy installation — just plugs in
- Keyvoicing — keys speak as they are pressed
- Direct text to speech capability

Our Low Sale Price
$29.95
List $49
(Add $3.00 shipping.*)

15 Day Home Trial • 90 Day Immediate Replacement Policy

Call
(312) 382-5050
We Love Our Customers!

Mail
COMPUTER DIRECT
22292 N. Pepper Road
Barrington, IL. 60010

Reader Service No. 212

SPEECH SET

Electronic Surgery for Your Amiga's Vocal Chords

By Bob Spirko

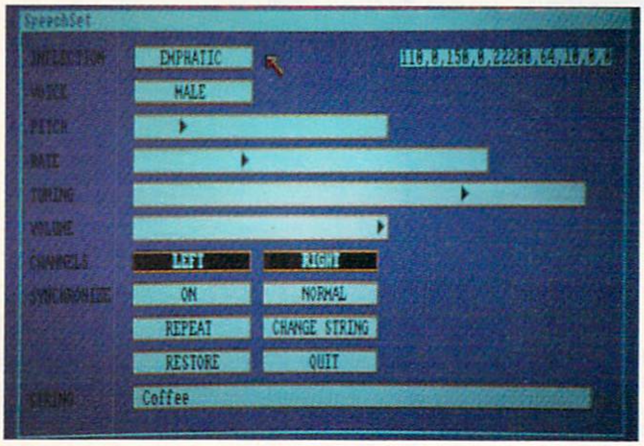


PHOTO: MICHAEL R. DAVILA

I recall a time, years ago, when I was at the Ontario Institute of Technology in Toronto and one of the devices on hand was a speech synthesizer. The synthesizer was only capable of saying one word, "coffee," but it offered a number of dials that could adjust such factors as rate and pitch. Now, years later, my desktop computer, an Amiga, sports the same capabilities. Since Amiga BASIC doesn't offer an easy way to explore speech synthesis, I wrote a program that allows you to change the parameters and see, or rather hear, the effects immediately, much the same as the device at the Institute did. If you haven't experimented with speech synthesis in your Amiga, then you'll enjoy using *Speech Set.* And if you're looking for a particular voice for your program, this program will help you find it.

There are nine parameters, or modes, that affect speech synthesis in Amiga BASIC: pitch, inflection, rate, voice, tuning, volume, channel, synchronization, and asynchronous control. *Speech Set* supports all of these. The screen displays the modes; you simply change any mode by clicking your mouse over it. Some modes switch between two or three settings, whereas others use a slide control. Selecting INFLECTION, for instance, will switch between "EMPHATIC" and "MONOTONE," whereas selecting PITCH will provide adjustments from a low value of 65 to a high of 320.

One control that differs from the others is CHANNELS. Here two boxes are displayed to indicate the left and right channels. When a channel is turned on, the box will appear in reverse. Clicking over the box will turn the channel on and off. Although *Speech Set* doesn't support all 11 possible channel settings, it does allow you to switch between the left and right speakers. There is no setting to turn off all channels, so when you turn off both channels it defaults to mode 11, where speech is directed to any available channel.

When you first use *Speech Set* you'll notice that you can't change the modes while your machine is talking; the program won't react to your command until it's finished what it's saying. Although it is normally impolite to interrupt someone when he's talking, it is perfectly okay to do so in Amiga BASIC. If you set SYNCRHONIZE to OFF/OVERRIDE, speech will be interrupted and another SAY command will be executed. If you set the control to OFF/STOP, then speech will be aborted without executing another SAY command. But if the setting remains there, no sound will be produced until it is changed.

The screen also displays two commands that won't affect the speech modes. One of these, REPEAT, allows you to say a string again without changing any settings. Normally, each time you change a mode the program will repeat the string with the new setting. Unlike the machine at the museum, *Speech Set* provides a way of changing the monologue. Select CHANGE and you can enter the word or sentence of your choice.

Lastly, if you choose RESTORE, all the modes will be restored to default values, the values that the program starts with. Incidentally, at the top of the screen is a numerical list of the modes. These are updated with every change. When you want to keep a particular mode set, copy down these numbers. They are in sequential order so that you use them in DATA statements just as they appear. □

```
DEFSTR a-c:DEFINT d-z
SCREEN 1,640,200,2,2:WINDOW 2,"SpeechSet",(0,0)-(628,186),16,1
DIM pointer(20),blank(20)
a=TRANSLATE$("coffee"):ltch=l:rtch=l
FOR i=0 TO 8:READ s(i):NEXT:FOR i=0 TO 2:READ ctrl(i):NEXT
COLOR 2,1:LOCATE 2,51:PRINT "110,0,150,0,22200,64,10,0,0
COLOR 2,0:LOCATE 2,2:PRINT "INFLECTION";
LINE (118,6)-STEP(122,10),3,b:PAINT STEP(1,1),1,3
COLOR 2,1:PRINT TAB(19)"EMPHATIC
LOCATE 4,2:COLOR 2,0:PRINT "VOICE";
LINE (118,22)-STEP(122,10),3,b:PAINT STEP(1,1),1,3
COLOR 2,1:PRINT TAB(21)"MALE":COLOR 2,0
FOR i=1 TO 4:READ atitle,place(i),edge(i):e=edge(i)+10
  LOCATE 4+i*2,2:PRINT atitle
  LINE (118,22+16*i)-STEP(e-118,11),3,b
  PAINT (120,24+16*i),1,3
NEXT
LINE (165,40)-(172,43):LINE (172,43)-(165,47)
LINE (165,47)-(165,40)
PAINT (167,42),2,2
GET (165,40)-(172,47),pointer:GET (120,40)-(128,47),blank
FOR i=2 TO 4:PUT (place(i),24+i*16),pointer,PSET:NEXT
LOCATE 14,2:COLOR 2,0:PRINT "CHANNELS";
LINE (118,103)-STEP(122,9),3,b:PAINT STEP(1,1),2,3
COLOR 1,2:PRINT TAB(21)"LEFT
LINE (254,103)-STEP(122,9),3,b:PAINT STEP(1,1),2,3
LOCATE 14,38:PRINT "RIGHT
COLOR 2,0:LOCATE 16,2:PRINT "SYNCHRONIZE";
LINE (118,118)-STEP(122,10),3,b:PAINT STEP(1,1),1,3
```

Continued on page 80

CHECK US OUT! WE MAKE IT EASY

☑ SERVICE ☑ SUPPORT ☑ SELECTION ☑ PRICES ☑ GUARANTEE

UTILITIES

AC BASIC	135
AC FORTRAN	199
Assempro	64
Atalk Plus	52
Aztec Debugger	49
Aztec Developer	195
Aztec Professional	129
Benchmark Modula 2	129
Butcher 2.0	25
C64 Emulator	46
CLI Mate	27
DOS-2 DOS	35
Diga	52
Disk-2-Disk	32
Diskmaster	39
FACC II	25
Flipside	39
GOMF	25
Lattice C Professional	179
Lattice C Regular	129
Maurader 2	25
Online	45
Power Windows 2 EA	59
True BASIC	69

PRODUCTIVITY

Business

Amigamotion	65
Deluxe Write	69
KFS Accountant	195
Microlawyer	39
Money Mentor	69
Nimbus Accounting	95
P.H.A.S.A.R.	61
The Works	129

Databases

Acquisition	189
DataRetrieve	52
Logistix	95
Microfiche Filer	69
Organize	52
Superbase Personal	95
Superbase Professional	199

Spreadsheets

Analyze 2.0	94
Haicalc	39
Maxi Plan	95
Maxiplan Plus	129

Wordprocessing

Becker Text	89
Dynamic Word	129
Excellence	129
Fleet Check	27
Flow	65

PRODUCTIVITY

Gold Spell	29
LPD Writer	75
Laser Script	29
Lex Check	25
Precisely	55
ProWrite	75
Reason	249
Scribble	55
Softwood Write/File	69
Textpro	52
Wordperfect	225

ENTERTAINMENT

AAArg	25
Airball	27
Alien Fire	27
Arazok	29
Archon 2	17
Arkanoid	35
Artic Fox	29
Auto Duel	35
Awesome	33
BMX Challenge	19
Balance of Power	29
Barbarian	27
Bard's Tale	33
Beyond Zork	34
Black Cauldron	29
Black Jack Academy	27
Block Busters	33
Breach	27
Bridge 5.0	25
California Games	29
Capone ** NEW **	27
Crown Jewels	27
Dark Castle	29
Defender of the Crown	33
Deja Vu	33
Descartes	25
Destroyer	29
Dungeon Master ** NEW **	call
Ebonstar ** NEW **	27
Ferrari Formula One	33
Fire Power	19
Flight Simulator 2	35
Footman	22
GB Air Rally	27
GO	28
Galatic Invasion	19
Gold Runner	27
Golden Path	29
Grand Slam Tennis	32
Gridiron Football	42
Guild of Thieves	29
Hardball	29
Harrier Combat	33
High Roller	35

ENTERTAINMENT

Hunt for Red October	33
Ice Hockey ** NEW **	call
Indoor Sports	33
Insanity	27
Into the Eagles Nest	29
Jet ** NEW **	35
Jewels of Darkness	22
Kampgruffe	39
Karate Kid 2	27
King of Chicago	33
King's Quest 1, 2 OR 3 EA	33
Knight Orc	29
Land of Legends	32
Leaderboard	26
Marble Madness	33
Mean 18	29
Moebius	39
Pawn	29
Phantasie 3	27
Phasar GUN ** NEW **	40
Plutos	22
Port of Call	32
Power Pak GAMES	25
Racter	30
Return to Atlantis	33
Road Europa	29
Roadwar 200	27
Rocket Ranger	33
Rogue	27
Romantic Encounter	27
S.D.I.	33
Shadow Gate	33
Shanghai	27
Silent Service	33
Silicon Dreams	23
Sinbad	33
Smooth Talker	33
Space Quest	33
Star Fleet 1	39
Star Glider	29
Stellar Conflict	27
Strip Poker	29
Surgeon	34
Tass Times in Tonetown	27
Tele Games	24
Tele Wars	27
Terrorpods	27
Test Drive	29
Thexder ** NEW **	25
Three Stooges ** NEW **	32
Timebandits	27
Turbo	19
Ultima 3	29
Ultima 4	39
Uninvited	32
Video Vegas	25
Vyper	22
Wrath of Nicodian	27

ENTERTAINMENT

Demonstrator	22
Discovery Expansion Disks	15
Discovery Titles ALL-CALL	27
Fairy Tale Adventures	32
First Letters	33
First Shapes	33
Great States 2	29
KidTalker	33
Linkword Foreign Lang EA	24
Little Computer People	25
Mastertype Improved	29
Math Talk	33
Mathtalk fractions	33
Perfect SAT Score	55
Planetarium	45
Senor Tutor	52
Speller Bee	33

CREATIVITY

Publishing

Page Setter	90
Professional Pages	249
Publisher Plus	64
Publishing Partner	129
Shakespeare	149

Graphics

Analytic Art	40
Animate 3D	99
Animator Effects	33
Animator Flipper	27
Animator's Apprentice	195
Animator/Images	85
Award Maker Plus	call
Bumper Sticker Maker	37
Business Card Maker	37
Calligrapher	82
Calligrapher 4-Pak	59
Centerfolds	call
City Desk	99
Color Separator	129
Comic Setter	65
Deluxe Paint 2.0	92
Deluxe Photo Lab	70
Deluxe Print	70
Deluxe Video	92
Digi Paint	40
Digi View 2	129
Director	49
Draw Plus	165
Dynamic CAD	249
Express Paint 2	52
Graphics Studio	39
Home Builder's CAD	129
Impact	59
Intro CAD	52
Lights	52

CREATIVITY

Page Flipper	35
Photon Paint	65
Photon Video Cell	105
Photon Video Translator	195
Pix Mate	45
Print Master Plus	33
Print Mst Fonts/Borders	22
Project D	35
Silver	115
TV Show	64
TV Text	64
Video Titler	95
Video Toaster	call
Videoscape 3D	125

Sound/Music

Audio Master	39
Deluxe Music	70
Dynamic Drums	52
Dynamic Studio	129
Hotlicks	34
Instant Music	34
Music Mouse	55
Music Studio	34
Music X	195
Sonix	52
Studio Magic	65
Synthia	65

BRIWALL

Solid Products • Solid Support

P.O. Box 129, 56 Noble St.
Kutztown, PA 19530

TOLL-FREE 24 HOURS
1-800-638-5757

OUR PROMISE

WE GUARANTEE YOUR SATISFACTION

If, for any reason, you are not satisfied with your selection within 15 days of your receipt, simply return the product to us. We will either issue you full credit for exchange on another selection, or refund your purchase price, less $5.00 for restocking and handling. Defective items are replaced free of charge!

Free Spirit Software Inc.

ULTRA DOS UTILITIES
MODULE I

Ultra DOS Utilities - Module I is the ultimate file handling and backup system for the Amiga series of computers. Ultra DOS brings the simplicity and ease of use of the intuition operating system to AmigaDOS. Use UltraDOS to:

- Perform virtually all AmigaDOS functions at the click of a mouse button
- Copy/delete files from/to any legal AmigaDOS device
- Copy by simple or complex wild card patterns
- Copy by creation date, volume device or directory
- Quickly and easily install even the most complex software on your hard drive
- Backup valuable files on a floppy or hard drive
- Perform whole hard drive backup with multi-format feature
- Preview & edit text files
- Preview IFF picture files
- Set & clear all types of file protection

Ultra DOS Utilities - Module I supports "batch" selection of files for copy/deletion and allows file selection across directory or volume boundaries greatly easing software installation on hard drives. Ultra DOS uses double buffering for lightning fast copies. Since Ultra DOS does not monopolize the CPU to achieve its speed, multi-tasking is fully supported. Ultra DOS auto-configures to multi-hard drive systems or multi-partitions. Ultra DOS will support more than 10 meg of memory. Ultra DOS is compatible with all Amiga versions (512K Amiga required).

Ultra DOS Utilities - Module I makes all other intuition based DOS utilities obsolete. **only $39**

Your Key to Learning The AMIGA™



The 'Kickstart'™ Guide to the AMIGA™ **ONLY $24.95**

A most comprehensive guide to operating the AMIGA™
A best seller in Europe finally offered in the US!

ADRIADNE SOFTWARE LTD with Midnite Press
Distributed by Micro Pace, Inc. 1212 Hagan, Champaign, IL 61820
Dealer inquiries welcome (217) 356-1885

DO WE HAVE HARDWARE?
! YES !

Call or write for our complete price list of hardware & accessories!

$$$$$$$$
COLLECT BONUS DOLLARS

One bonus dollar, good towards your next purchase, for every $50.00 ordered!

CALL FOR LATEST PRODUCTS, PRICES AND COMBINATION SPECIALS!

ORDERING INSTRUCTIONS: VISA, MasterCard, Personal Check, Money Order, COD or School P.O.'s are welcome. Shipping USA $4.00/ground, $6.00/2nd Day, $14.00/overnight. C.O.D. add $3.00. Canada/Mexico: $6.00 Air Mail Foreign: $12.00 (for Air Mail use charge & specify maximum). PA residents add 6% sales tax. Include phone number and computer drive model with order. All items will be shipped immediately, (if we are out-of-stock we will let you know). **SHIPPING CHARGE IS PER ORDER!**

For CUSTOMER SERVICE please call us:
Monday thru Friday, 9:30 a.m. - 4 p.m. EST
1 - (215) - 683-5699

VISA NO SURCHARGE MasterCard

Reader Service No. 191

SEIKOSHA



Sp 180VC

$129.95

- 100 cps Draft
- 20 cps NLQ
- Direct Connect for Commodore

Quantities Limited

star micronics



Star NX1000C

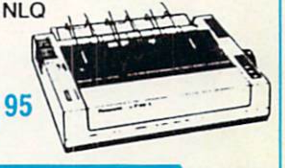
$179.95

- 144 cps Draft
- 36 cps NLQ
- EZ Front Panel Control
- Commodore Direct Connect

Panasonic Office Automation

1091i Model II

- 192 cps Draft
- 32 cps NLQ



$195.95

PRINTERS

SEIKOSHA

SP 180Ai	$129.95
SP 180VC	$129.95
SP 1000VC	$139.95
SP 1000AP	$169.95
SP 1200VC	$155.95
SP 1200Ai	$165.95
SP 1200AS RS232	$165.95
SL 80Ai	$299.95
MP5300Ai	$399.95
MP5420FA	$995.95
SP Series Ribbon	$7.95
SK3000 Ai	$339.95
SK3005 Ai	$419.95
SPB 10	$CALL
SL 130Ai	$599.95

Toshiba

321SL	$499.95
341 SL	$659.95
P351 Model II	$899.95
351 SX 400 cps	$1019.95

star micronics inc

NX-1000	$169.95
NX-1000C	$179.95
NX-1000 Color	$225.95
NX-1000C Color	$229.95
NX-15	$309.95
NR-10	$339.95
NR-15	$439.95
NB-15 24 Pin	$699.95
NB24-10 24 Pin	$425.95
NB24-15 24 Pin	$579.95
Laser 8	$CALL

CITIZEN

120 D	$169.95
180 D	$189.95
MSP-10	$259.95
MSP-40	$309.95
MSP-15	$349.95
MSP-50	$399.95
MSP-45	$459.95
MSP-55	$539.95
Premiere 35	$499.95
Tribute 224	$649.95
Tribute 124	$489.95

EPSON

LX800	$184.95
FX86E	$279.95
FX286E	$424.95
EX800	$399.95
LQ500	$339.95
LQ2500	$819.95
GQ3500	$LOW
LQ850	$525.95
LQ1050	$715.95

OKIDATA

Okimate 20	$119
Okimate 20 w/cart	$179.95
120	$189.95
180	$219.95
182	$209.95
182+	$225.95
183	$249.95
192+	$339.95
193+	$449.95
292 w/interface	$449.95
293 w/interface	$585.95
294 w/interface	$819.95
393	$955.95

Panasonic Office Automation

1080i Model II	$179.95
1091i Model II	$195.95
1092i	$319.95
1592	$409.95
1595	$459.95
3131	$299.95
3151	$479.95
KXP 4450 Laser	$CALL
1524 24 Pin	$559.95
Fax Partner	$589.95

BROTHER

M1109	$164.95
M1409	$299.95
M1509	$335.95
M1709	$475.95
Twinwriter 6 Dot & Daisy	$899.95
M1724L	$619.95
HR20	$345.95
HR40	$599.95
HR60	$709.95

COMMODORE 128D System



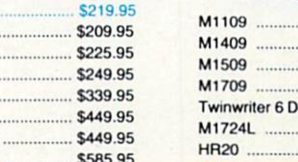
$449.95

COMMODORE HARDWARE

64C Computer	$169.95
C128D Computer/Drive	$449.95
1541 II Disk Drive	$175.95
1581 Disk Drive	$189.95
Excel 2001 C128 Drive	$199.95
Excel FSD-2+ C64 Drive	$149.95
1802C Monitor	$189.95
1084 Monitor	$299.95
Thomson 4120 Monitor C128	$219.95
C1351 Mouse	$39.95
1700 RAM	$109.95
1764 RAM C64	$117.95
Colt PC	$689.95

COMMODORE 64C COMPUTER

$169.95



COMMODORE COLT

- True IBM P/XT Compatibility
- 640K standard
- Turbo speed Processor
- 2-5¼ 360K Drives
- M S-DOS 3.2 +GW Basic 3.2



$689.95



Attention Educational Institutions:

If you are not currently using our educational service program, please call our representatives for details.

COMMODORE 64C System Special

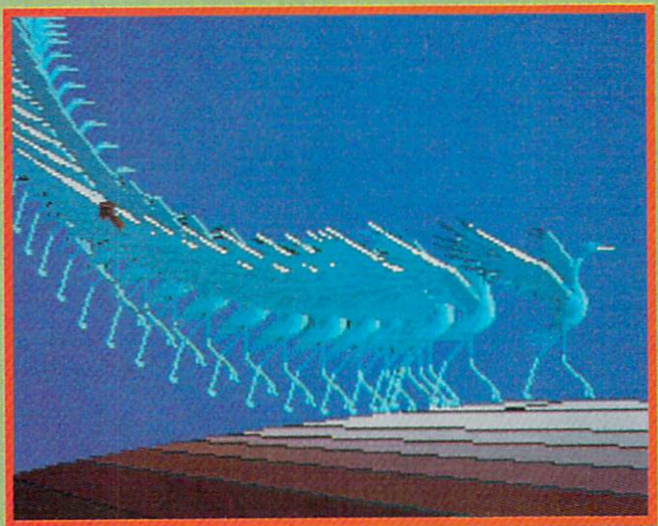
$499.95

- Commodore 64C Computer
- Commodore 1541 II Disk Drive
- Star NX1000C Commodore Ready Printer



Art Gallery

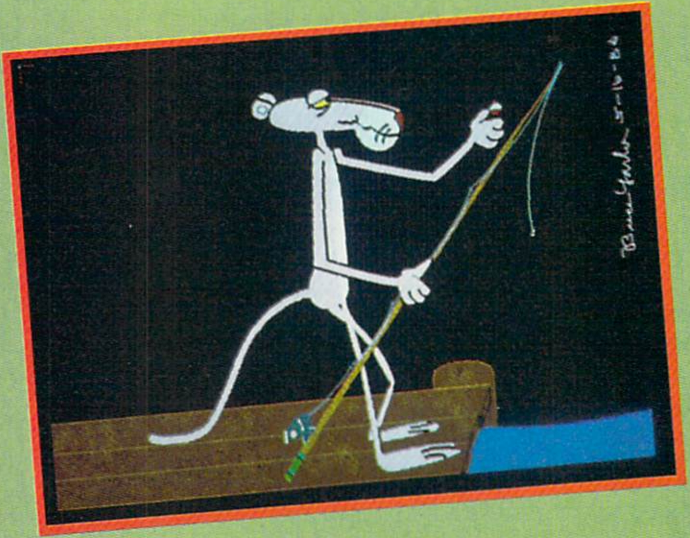




The *Art Gallery* offers the opportunity for fame and fortune to aspiring Commodore artists. Send your work on disk to *Art Gallery,* Ion International Inc., 45 West 34th Street–Suite 500, New York, NY 10001. Indicate the drawing package or file format of the images. Graphics produced on the Amiga are eligible for inclusion in *Ahoy!'s AmigaUser;* C-64, C-128, and Plus/4 images are eligible for inclusion in *Ahoy!* If your image is published, you will receive a free one-year subscription. Current subscribers will have their subscription extended by one year.

Note that the *Art Gallery* is not a contest. Published pictures are selected in an arbitrary and capricious fashion by the Art Director, based solely on their artistic merit.

All this month's images were created with *Deluxe Paint.* Glenn S. Adkins (Palm Beach Gardens, FL) drew *Bird* (top left), picked it up as a brush, and swooped his hand across the table to create the landing effect. His *Woods Scene* (top right) is done with air brush, fill, and some curved line work in the foreground. Bottom left: *Pink* by Bruce Yarbor (Oklahoma City, OK). Bottom right: *Zebra* by Timothy C. Suveges (Wilmington, NC).





the new MaxiPlan Plus. . .



it's making every other spreadsheet old fashioned!

The original MaxiPlan™ was named the Best Amiga Spreadsheet of 1986 by a poll of Amiga User Groups conducted by F.A.U.G. Now in 1988, MaxiPlan has received Amiga User International's Oskar in the Spreadsheet Category. MaxiPlan Plus incorporates many time-saving innovations including a Macro Language facility similar to Microsoft Excel's™ allowing automation of complicated spreadsheet analysis or data input.

With MaxiPlan Plus and your Amiga you can:
- Open multiple spreadsheets and charts
- "Link" data from any number of spreadsheets
- Create a self-running demo or interactive multiple choice quiz, incorporating files from word processors and paint programs
- Automatically create reports such as invoices and purchase orders
- Instruct a data entry person with spoken or written prompts
- "Recite" your data entries when checking data accuracy against source documents
- Export Charts via IFF file format to any Amiga paint program

The MaxiPlan Spreadsheet features:
- 512 columns by 32,760 rows
- Function key commands
- Ranges or cells reference by "Name" or cell address
- Written or spoken cell notes
- Password protection
- 11 Chart styles including: 3-D Bar, 3-D Pie, Stacked Bar, X-Y scatter, Step, Hi-Lo, Area, Line, Bar, Pie and Exploding Pie
- Up to 8 Charts per spreadsheet
- Lotus 1-2-3 import capability
- Over 70 built-in functions such as:
  - Financial (IRR, NPV, FV, PMT)
  - Database (Index, Find, Lookup)
  - Presentation (Color, Style, Speech)

With the MaxiPlan Plus Database you can:
- Simultaneously Sort on any number of Fields in any order
- Maintain up to 63 Databases per spreadsheet
- Create merge files for labels and form letters
- "Find" or "Lookup" any specific record or records

With MaxiPlan Plus Macros you can:
- Define up to 64 macros per Macrosheet
- Automatically generate macros under Record Mode
- Use over 95 different macro commands
- Create templates for data entry
- Incorporate speech to instruct, remind, or inform user
- Adapt sample Macros for your own applications

MaxiPlan Plus™
List Price $199.00
Available at your local Amiga Software Dealer

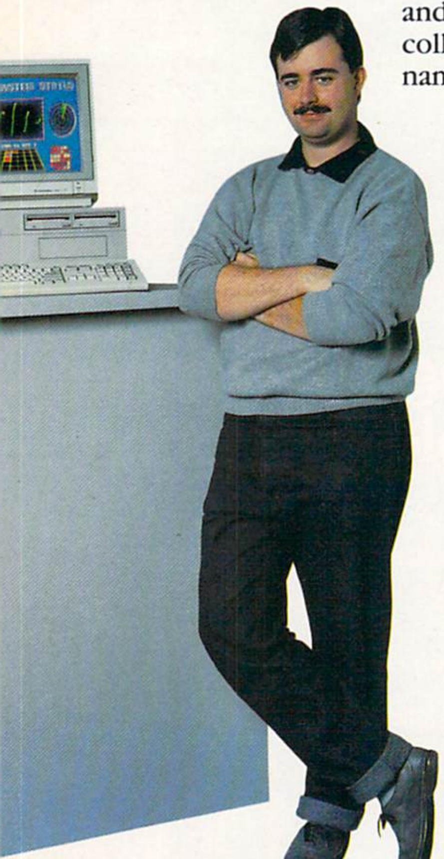


Oxxi Inc
P.O. Box 90309
Long Beach, CA 90809-0309
(213) 427-1227

MaxiPlan
Named Best Amiga Spreadsheet of 1986 and recipient of Amiga User International's 1988 Oskar in the Spreadsheet Category for its "Highly flexible and comprehensive spreadsheet facilities right across the Amiga range"

We Focus

In the growing video market one company leads the way in top-quality, low-cost, computer effects software. Aegis. You'll find our products working at every level in the video field. Professionals in television, video production, cable TV, industrial and government video, college, schools—you name it, we're there.



We're there because our products provide flexible technology that sparks the imagination. Technology that gets the job done.

You'll find us at Prism Graphics
For Jeff Bruette the Amiga spells success. He uses Aegis programs like VideoScape 3D, VideoTitler, and Animator to help him produce graphics and animations for television programs like *Max Headroom* and *Secrets and Mysteries.*

At MetaVision
When Theo Mayer and Peter Inova began work on a video project for Universal Studios tours they decided to try out an Amiga for a particular effect they wanted. It worked perfectly, and they saved thousands of dollars in post production fees. Next, they put Aegis products to work producing animations for a McGraw-Hill home



video. They were convinced, and the Amiga with Aegis software became an integral part of the studio.

At Master Communications
The publishers of the popular *Board Sailing Year* annual video put Aegis software to work for their corporate clients. An Amiga 2000 is part of their video production house and they use products like VideoScape 3D, Animator and AudioMaster for special effects and logos.

And at Pixelight
Independent Amiga artist, Nick Poliko, uses Aegis products to create graphics and animations for such clients as CommCorp, Purolator, and Union Gas. They use his artwork for everything from public relations videos to attention getters at trade shows.



With Products for Graphics, Animation
We handle metamorphic, cel, and color cycling animation with Aegis Animator. Animations are created and edited in an interactive environment allowing you to watch your animation as you build it. Winner of the 1986 CES Award of Excellence, Animator has already found thousands of uses around the world. Included in the $139.95 price is the Images paint system.

Award winning in its own right Images is a lot of paint program for a small price. With color cycling, mirrors, air brush, pantograph, gradient fill, over 40

on Video



other features, and a price of $39.95, Images has the best price/performance ratio in paint packages.

Business graphics are a snap with Impact! Pie, bar, line, area, symbol, and scatter-gram charts are all easily created with every element of the chart from labels to axes available for editing. You also get a slide show generator with eight different dissolves and wipes. All for $89.95.

For the advanced animator VideoScape 3D provides an environment rich in 3-dimensional capabilities. Object motion and metamorphosis, camera motion, light sources, IFF foregrounds and backgrounds, and the ability to create animations in the ANIM format are just a few of the features that make the $199.95 price tag a great buy.



For titling you can't beat Aegis VideoTitler. It supports all of the Amiga fonts as well as its own polytext fonts, works in four different resolutions and uses overscan. It has 20 different styles, works with IFF, uses halfbrite if available, and supports the ANIM format. Included in the amazing $149.95 price is a slideshow generator that can mix ANIM animations with slides.

And Sound

Our video effects don't stop with great visuals. Programs like Sonix and AudioMaster take on the world of music and sound as well. Winner of a CES 1987 Award of Merit, Sonix lets you create your own instruments, compose music, and work with MIDI instruments. All for $79.95.

We back up Sonix with AudioMaster, a digital sampling and editing program. It features interactive editing of the waveform and effects like echo, reverse, and low pass filtering. It also makes use of expansion memory (up to 9.5 MB) for extra long samples. Just $59.95.

For more information and the dealer nearest you: (213) 392-9972 or to order direct: **1-800-345-9871.**



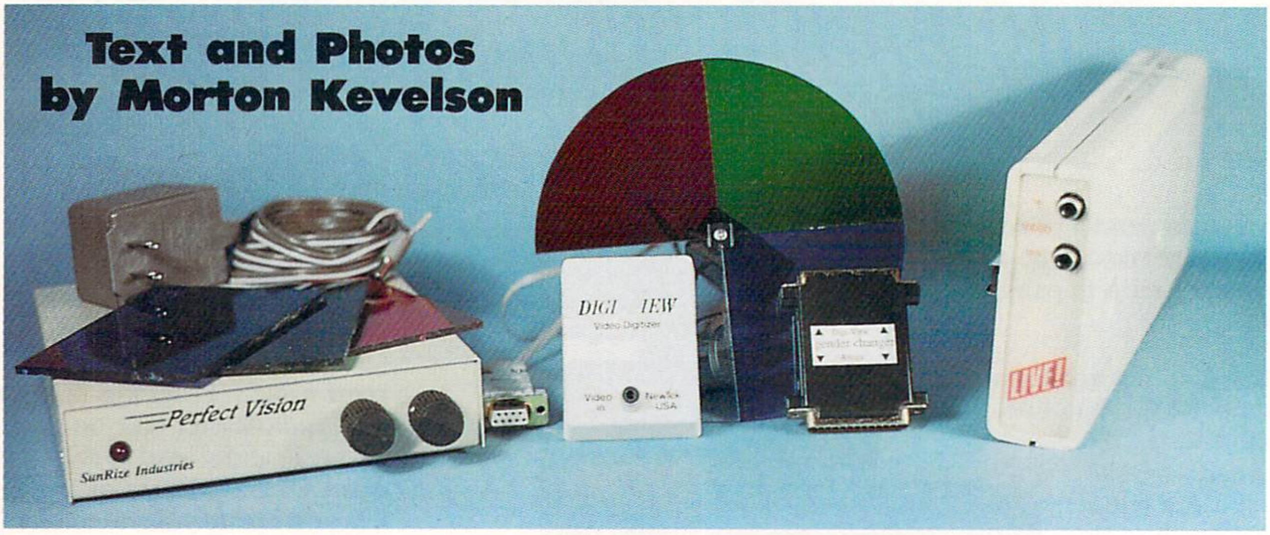
AEGIS

2210 Wilshire Blvd., Suite 277
Santa Monica, CA 90403

Reader Service No. 214

VIDEO DIGITIZERS AND FRAME GRABBERS

Text and Photos by Morton Kevelson



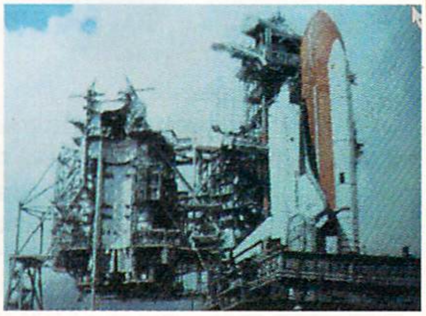
"Oh say can you see?" we asked our Amiga after we finished testing the crop of audio digitizers presented in the May issue. But the computer's answer was no—for while it came with the ability to speak, and we had endowed it with the ability to hear, visual perception was still beyond its grasp. (So, too, was the degree of independent thought necessary to actually have answered our question—but we're allowed to take journalistic license.)

However, the Amiga's developer community is now ready to provide the means by which the Amiga can become visually aware. Thus we present you with three low cost products for the purpose. Furthermore, if you have loose purse strings and are willing to wait a brief while, you will be able to choose from at least two more contenders (see **Decisions** on page 47).

We first looked at an Amiga video digitizer in the March 1987 *Ahoy!* At that time we presented Digi-View along with a beta copy of its version 2.0 software. In this report we will take an updated look at this first digitizer and a beta copy of its version 3.0 release. We will also examine Perfect Vision and the long awaited LIVE! Both of these products bring frame grabbing, as well as video digitizing, to the Amiga.









Sample Digi-View images in HAM mode, interlaced with over-scan. *READER SERVICE NO. 188*

DIGI-VIEW 3.0
NewTek
Amiga 500/1000/2000
Price: $199.95

The basic Digi-View hardware has not changed since we looked at it over one year ago. Its 2 x 3" module is designed to plug directly into the parallel port on the Amiga 1000. If you are using an Amiga 500 or 2000, you will also need to use the Digi-View gender changer. This module contains the electronics and hardware to adapt Digi-View to the new computer. In the process it extends the parallel port about two inches.

An RS-170 or NTSC signal is fed directly to Digi-View via an RCA jack on the back of the module. For best results an RS-170 high resolution monochrome security camera with 2:1 interlace should be used. A color NTSC signal can be digitized with some loss of resolution. Digi-View only does a



Other Products from The Other Guys

REASON - a professional proofreading system used by universities and writers around the world to analyze and improve writing. **(Has helped raise students grades when used faithfully.)** $395.00

OMEGA FILE - a *REAL* data base & mail merge $79.99

PROMISE - the *BEST* high speed spell checker. (Even better than Zing!® Spell) $49.99

KEEP-Trak GL - general ledger for home or business $49.99

AMT - amortization program $39.99

MATCH-IT -teaches shapes & colors (preschool) $39.99

MATH-A-MAGICIAN - add, subtract, multiply & divide $39.99

Call or write for more information.

SYNTHIA *High Performance Digital Synthesizer*

A state of the art music tool which will:

Create digital **IFF Instruments** for use with nearly all music programs!

Modifying existing **IFF Instruments**. Use *SYNTHIA* on digitized samples to add reverb, wow, and other enhancements.

SOMETHING FOR EVERYONE:

Additive Synthesis - a traditional method which can create almost any type of instrument.

Plucked String Synthesis - simulates plucked strings . . . right down to the 'pluck'.

Interpolative Synthesis - a method which introduces the natural imperfections found in instruments. (Instruments such as brass, woodwinds, pianos, etc.)

Percussion - build your own drum set . . . create any drum you desire.

Subtractive Synthesis - a simple method of creating instruments.

Special Effects - includes filtering, amplification, phasing, waveshaping, amplitude modulation, real reverb, and . . .

IFF Music Player - powerful and compact. Now you can enjoy those songs that needed a memory expansion before! Up to 32 tracks and 32 IFF Instruments! Supports chords, ties, etc.

NOW SHIPPING

IS IT LIVE . . . OR IS IT SYNTHIA?

Synthia uses the latest technology to generate realistic sounding instruments and even the new families of instruments sound real. A real synthesizer on a real computer!

Why buy digitized instruments when you can *SYNTHIAsize* them?

Requires AMIGA 512K

$99.99

THE OTHER GUYS

55 North Main Street
Suite 301-D
PO Box H
Logan Utah 84321

(801) 753-7620
(800) 942-9402

VISA MasterCard

monochrome digitization. To generate a color image, you have to perform three digitizations through a set of colored filters which are supplied with the unit. You will need a color separator to digitize a color image from an NTSC signal. The color separator extracts the red, green, and blue information from the NTSC signal and presents it to Digi-View as three separate, monochrome signals.

Digi-View is not a frame grabber. It requires at least five seconds to digitize a single frame. A composite color image takes a minimum of 15 seconds to complete. The default time is 10 seconds per pass or 30 seconds for full color. In addition to the time it takes to actually obtain the data, you have to add the time it takes to process the data into a displayable image. Processing time varies depending on the resolution of the image and the display mode. Actual processing times can exceed the digitization times. Images can be digitized to fill the screen or occupy a half or quarter of the display.

For this review we took a look at a beta copy of version 3.0 of the Digi-View software. The basic operation of the software has not changed since version 2.0. The main improvements are in the variety of display modes in which Digi-View can operate. The opening screen now offers no fewer than 32 options, which include all of the Amiga's standard display modes as well as overscan. The image width can be 320, 352, 640, or 704 pixels. The image height can be 200 or 240 non-interlaced and 400 or 480 interlaced.

The color options now include the 64 color halfbrite display as well as the standard 32 color mode along with the 4096 color Hold and Modify (HAM) mode. Note that some of the early Amiga 1000s are unable to generate the halfbrite display. The Amiga generates its colors based on four bits for each of the three primary colors. When Digi-View digitizes an image, it actually works with seven bits for each color. Internally, this allows for over 2,000,000 color combinations. The extra bits let Digi-View adjust the brightness, contrast, saturation, and tint of the displayed image over a much wider range than would be possible with just four bits per color.

The plastic colored filters which are supplied with Digi-View are assembled into a wheel with a simple metal bracket for mounting via the camera's tripod socket. The wheel has to be manually turned prior to each digitization. For $79.95 you can purchase Digi-Droid, a motorized assembly which will turn the wheel for you. This may seem like a frivolous expenditure for many users. However, if your setup mandates some distance between your computer and the camera, it can save a lot of time and shoe leather.

Digi-Droid plugs into the second joystick port via 10 feet of flimsy looking three conductor ribbon cable. Nevertheless, this wire has managed to survive at least three incidents of tanglefoot tango in our office. The Digi-View software automatically recognizes the presence of Digi-Droid in the joystick port. It responds by adding motor calibrate and automatic digitize options to the menus.

Before booting Digi-View with Digi-Droid on an Amiga with expansion memory, be sure to execute FastMemFirst or an equivalent utility. This forces all executable code into the expansion RAM whenever possible. Digi-View has problems operating Digi-Droid, especially when generating high resolution (640 pixel wide) displays, if its operating code gets into chip RAM.

Our opinion of Digi-View has not changed in the past year and a half. We feel it is a versatile, low cost product which is able to generate high quality digitized images in color or black and white. The new display modes, in version 3.0, add even more versatility. A good monochrome camera will be required for best results.

NewTek, 115 W. Crane St., Topeka, KS 66603 (phone: 800-843-8934).

PERFECT VISION
SunRize Industries
Amiga 500/1000/2000
Price: $219.95

SunRize Industries seems intent on becoming the sensory wizards of the Amiga community. In the May issue we examined Perfect Sound, a sound digitizer for the Amiga. Now we look at Perfect Vision, a real time video digitizer and frame grabber for the Amiga and IBM compatibles. Rumor has it that SunRize is surreptitiously working on Perfect Smell and Perfect Feel for release in the far future. In view of the Amiga's capabilities, these wouldn't surprise us.

Perfect Vision is housed in a 6" wide by 7" deep by 1½" high stand alone metal enclosure. On its front panel we found a power indicating LED, along with contrast and brightness controls. On the back panel we discovered the on/off switch beside a jack for the external power module, an RCA jack for video input, a standard Centronics connector for hooking up to the computer's parallel port, and a nine pin joystick connector for controlling an external color separator. Perfect Vision will accept either an RS-170 or NTSC video signal while rejecting the color data associated with the latter.

Perfect Vision has its own 64 kilobyte dynamic RAM buffer which enables it to grab a field in 1/60th of a second or a complete frame in 1/30th of a second. Each image is digitized with four bits, or 16 gray levels, per pixel. This translates to four bit planes of 8000 bytes, which adds up to a total of 32,000 bytes for a non-interlaced (320 by 200 pixel) image. For an interlaced (320 by 400 pixel) image, each bit plane requires 16,000 bytes for a total of 64,000 bytes. The hardware and the accompanying software is able to transfer and process the buffered data into the computer at the rate of approximately two frames per second.



A selection of digitized (300 × 400 pixel, 16 color) images captured off the TV screen with Perfect Vision.
READER SERVICE NO. 189

The first step in using Perfect Vision is to set its brightness and contrast controls. This will take a few minutes, as the settings are rather critical and have to be done at the two frame per second display rate. The software lets you display a histogram of the digitized image as an aid to checking the settings.

The histogram should show values across the entire brightness range.

Version 1.1 of the Perfect Vision software lets you capture images in several ways. All of the operating options appear on a series of menus which are continuously displayed across the bottom of the screen. The main menu presents CYCLE, EFFECTS, FILE, COLOR, OPTIONS, and QUIT. The CYCLE function brings up a second menu and immediately commences to update the displayed image at the two frame per second rate. At this point you can simply wait till you see what you want and preserve the image by EXITing back to the main menu. This is easy to do at the two frame per second rate. The second menu also lets you divide the display into quadrants in which the images are displayed in sequence. Images can be saved in IFF format or as RAW data.

The RECORD option brings up a third menu which lets you handle image sequences. You can set the maximum number of frames which will be recorded in the Amiga's RAM from 1 to 200. We were able to grab 82 non-interlaced images and 40 interlaced images in an Amiga 2000 equipped with three megabytes of RAM. Perfect Vision lets you SHOW the entire sequence of stored images, or GOTO and display individual frames. You can also step through the sequence a frame at a time in either direction.

Images can be individually saved, or the entire sequence can be automatically dumped to disk. In the latter case, Perfect Vision assigns sequential file names. Of course, you will need a hard disk to handle the output from an expanded Amiga. There was one additional option we would have liked: the ability to grab individual images into RAM while in the CYCLE mode. This feature may be added to the next revision of the software.



We tried out Perfect Vision by digitizing a series of images from broadcast television. The results were quite impressive. Each image was sharply defined without noticeable distortion. The 16 level gray scale rendered the colors into a very presentable black and white image. In fact, we couldn't remember our old 19" black and white TV ever looking this good.

The EFFECTS menu lets you process the image in several ways. The EDGE selection can be set to find horizontal, vertical, or all edges. The image can be sharpened or softened. A high contrast, two level image can be



generated by slicing at a preset threshold. All changes can be undone.

The OPTIONS menu is where you can set the operating modes. This is where you can select between the two display resolutions of 320 by 200 pix-



els or 320 by 400 pixels. You can also expand the image into overscan, although Perfect Vision does not digitize the image in this mode. It merely duplicates an occasional row and column of pixels to expand the display. You can fiddle with the palette to create your own false color effects, or you can simply add red, green, or blue tints to the image or select the built-in false color palette.

Perfect Vision cannot grab a color image from an NTSC signal. You can build a color image by digitizing a monochrome image three times through the colored filters provided. Of



course, this can only be done with a video camera. The manual suggests that you hold the filters before the lens. We rigged up a simple metal bracket instead. In fact, we used the bracket that came with Digi-View. The software lets you combine the three images into a standard 32 color display or into a 4096 color HAM display. The resulting image can be manipulated by adjusting its brightness, contrast, saturation, and the balance between its red, green, and blue components. Although the software only works with four bits per color, its effective operating range is extended by the use of the hardware brightness and contrast controls.

SunRize is presently working on a $100 hardware color separator which will allow you to digitize an image in color from a color camera or other NTSC signal. The color separator accepts a composite color signal and converts it to three monochrome signals whose brightness corresponds to the red, green, and blue content of the original image. We were able to preview a prototype of this unit, which lacked some of the features that will be part of the production model.

The final version of the color separator will include a matching connector to the nine pin port on the back of Perfect Vision. This will enable Perfect Vision to automatically cycle through the three monochrome images when doing a color digitization. With the automatic connection in place, Perfect Vision will be able to digitize a color image in about 1½ seconds.

The color separator can be used as a stand alone device, as it will be equipped with a manually operated switch for selecting the three images it generates. This will let you use the device with other products, such as Digi-View, to obtain a color digitization from a composite color signal. We will present a complete review of the color separator when the finished unit

is available.

The manual included with Perfect Vision is adequate and concise. The program disk includes a brief description of the operation of the digitizer and the source code for accessing Perfect Vision via the Amiga's parallel port.

Perfect Vision is the only unit we have seen to date which is able to grab a four bit plane image in real time. The resulting 16 level gray scale images are well-defined, with good tone and contrast. The unit is also able to digitize three stage color images through colored filters or via its optional color separator. The accompanying software provides several ways to capture a series of images from a dynamic video source. Perfect Vision gives you a lot of performance for your dollar.

SunRize Industries, 3801 Old College Road, Bryan, TX 77801 (phone: 409-846-1311).

Video Digitizing Versus Frame Grabbing

Simply put, the process of digitizing an image converts video information into digital data which can be manipulated, and displayed, by the Amiga. Frame grabbing is the ability to digitize an image in a video instant, which happens to be 1/30th or 1/60th of a second. To get a better understanding of what this means, we have to look at the structure of the video signal which we are digitizing.

In this country there are two related standards for video signals. The RS-170 standard is for monochrome or black and white images. Each image or frame is built up from 525 lines which are sequentially scanned across the display screen. A frame consists of two interlaced odd and even fields of 262½ lines each. The interlacing causes the lines of each field to be scanned between the lines of the prior field. It takes 1/60th of a second to scan a single field, or 1/30th of a second to scan an entire frame.

The National Television System Committee (NTSC, sometimes referred to as Never The Same Color twice) standard is the same as the RS-170 standard, except it provides for the addition of color information to the video signal. This color information originally consists of separate red, green, and blue signals which are encoded into the NTSC signal.

If the video signal does not change from frame to frame, such as a VCR in pause or the image of a stationary subject, then it may be digitized in a leisurely manner by examining any number of successive frames. If the image is constantly changing, you need a frame grabber to get a sharp picture. The frame grabber has to have the ability to digitize a field or frame in 1/60th or 1/30th of a second.

LIVE!

A-Squared Distributions Inc.
Amiga 1000
Price: $295.00

LIVE! at last. Ever since we watched Andy Warhol digitize Debby Harry at the presentation of the Amiga in Lincoln Center, New York City in August 1985, we have been wanting to get our hands on this gadget. Well, Andy is no longer with us, and we don't know what Debbie is up to nowadays, but LIVE! is here and we're here to tell you about it.

This review was based on the Amiga 1000 version of LIVE! The unit plugs into the computer's expansion port and dumps its digitized data right into the Amiga's RAM. A-Squared was already selling the Amiga 500 version of LIVE! as we went to press. This unit, which has its own power supply, contains special circuitry to prevent damage to the computer if you power up in the wrong sequence. The Amiga 2000 version of LIVE! should be available this summer.

As with the other video digitizers we have looked at, LIVE! has its own way of doing things. Having direct access to the Amiga's bus lets LIVE! transfer data to the computer at a fast rate. In fact, LIVE! transfers image bit planes in real time: 320 by 200 pixels in 1/60th of a second and 320 by 400 interlaced pixels in 1/30th of a second. Notice we said bit planes and not an entire image. A simple, 16 level gray scale image, which requires four bit planes, can be transferred and assembled by the LIVE! system in about 1/15th of a second.

The LIVE! hardware itself is housed as an Amiga-beige plastic enclosure 12" deep, 4" high, and about 1½" thick. To the left is the mating connector to the Amiga 1000's expansion port. Since there is no pass through connector, LIVE! will have to be the last peripheral on the bus. We ran LIVE! along with a C ltd aMEGA one megabyte expansion card without any problems. The video in and out jacks are easily accessed on LIVE!'s front panel. The inclusion of a video pass through lets you run a cable to the composite video jack on the monitor. This makes it easy to switch between the original video signal and the Amiga's own output. LIVE! will accept just about any RS-170 or NTSC composite video signal.

Inside the box we found the fully shielded circuit board which earned LIVE! its certification as a "class B computing device pursuant to Subpart J of Part 15 of FCC rules." The circuit board contains an imposing array of digital components along with a high speed (35 nanosecond), four bit analog to digital converter.

The LIVE! hardware is quite flexible and can be programmed to perform a variety of video processing functions. Software and hardware hackers will be pleased to hear that the LIVE! distribution disk includes detailed documentation on how the software works, along with source code for the LIVEbrary routines. The code is available for anyone to use it as long as it is used in conjunction with the LIVE! hardware. One of the things you will discover by scanning this documentation is that the nature of LIVE! precludes multitasking. In fact, LIVE! turns off the Amiga's operating system while it is digitizing an image.

As we mentioned above, LIVE! can display four bit plane, 16 level gray scale images at a rate of 15 frames per second. The animation actually looks nearly as smooth as the 30 frame per second rate of the original NTSC signal. Since the bit planes are taken from successive frames, the resulting images tend to blend from one to another as each bit plane is updated. On the other hand, grabbing a single image using this technique can result in some ghosting or shadowing if the original image is not stationary. The ghosting is caused by the shift in the registra-

GET ACCESS TO REAL BUYING POWER... WITH THE Ahoy! ACCESS CLUB!

Subscribing to *Ahoy!* and/or *Ahoy!'s AmigaUser* has always made sense—for you and for us. We get to keep more of your money when we cut out the middlemen (our distributor and your newsdealer), and we kick some of the savings back to you with a discount rate (see page 50).

And now you can save even more—in fact, you can save the cost of your subscription many times over!

The *Ahoy!* Access Club, launched in January 1986, has been expanded to offer its members even more clout in the Commodore marketplace. And for a limited time, membership will be awarded free to subscribers!

Here are some of the ways the *Ahoy!* Access Club can boost your buying power:

- The *Ahoy!* Access Club *Clipper*, published 12 times a year, contains exclusive discount offers on products advertised in *Ahoy!* and *Ahoy!'s AmigaUser*. Participating vendors offer reductions of 10%, 20%, 30%, or more on selected items, free bonus merchandise, and special closeout and combo offers not advertised elsewhere—all for Club members only!
- The *Ahoy!* Access Club Card is your ticket to discounts at participating computer software, hardware, and book dealers, and reduced admission at Commodore and Amiga conventions and swap meets across North America. (Details are found in each issue of the *Clipper*.)
- The *Ahoy!* Access Club BBS (modem required) offers continuously updated information on new offers available through the Club, as well as late-breaking industry news, corrections and updates to articles in *Ahoy!* and *Ahoy!'s AmigaUser*, and free electronic mail facilities. Operation is 24 hours a day, 7 days a week—for Club members only!

If you are presently a subscriber to *Ahoy!* or *Ahoy!'s AmigaUser*, your membership has already been activated. You'll receive the *Ahoy!* Access Club *Clipper* with your next issue of *Ahoy!* (October) or *Ahoy!'s AmigaUser* (November).

If you're not a subscriber, fill out and return the postpaid card bound between pages 50 and 51 today!

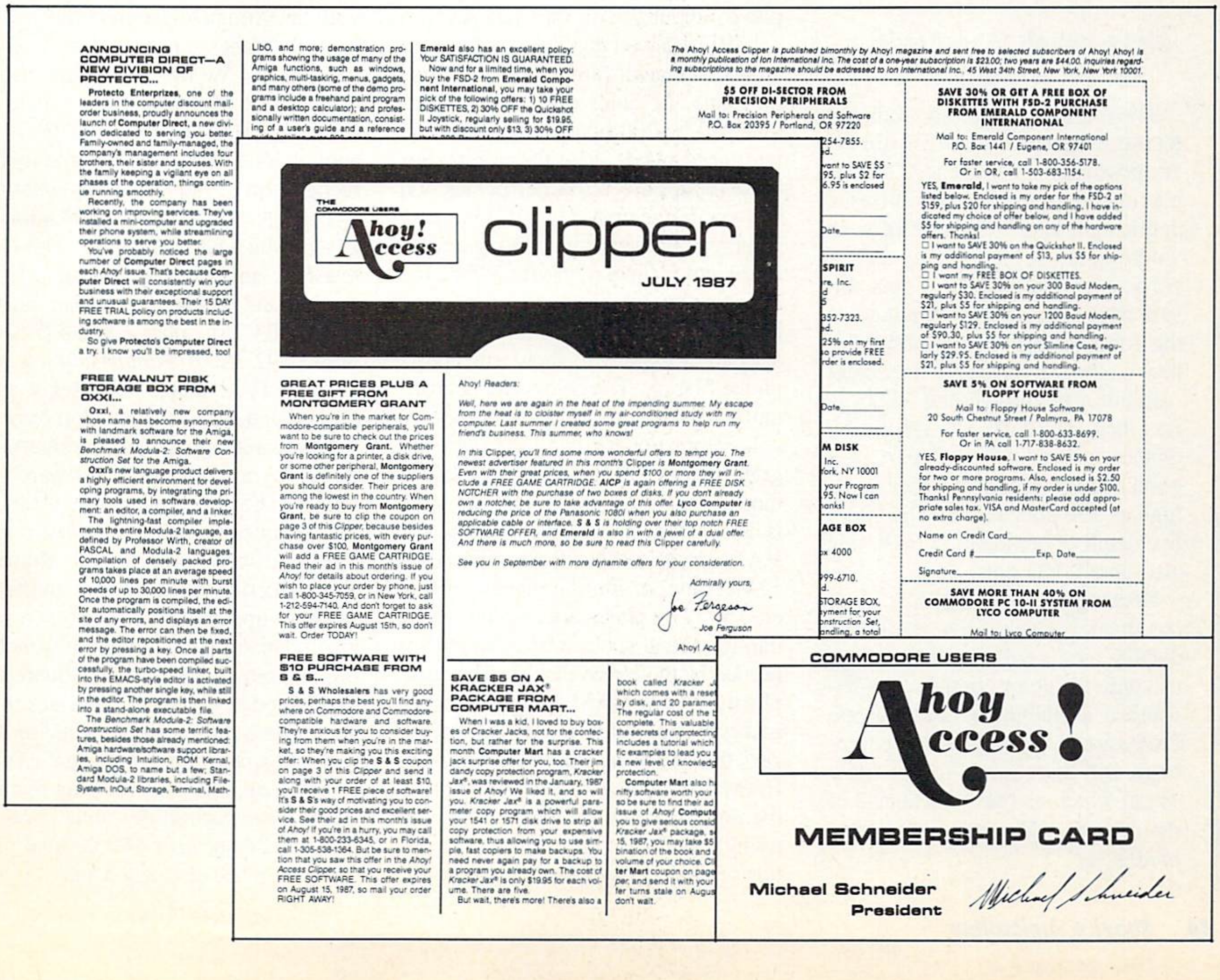
Let everyone else pay list price. You don't have to...when you have Access!

LOCK IN YOUR FREE MEMBERSHIP NOW!

Ahoy! Access Club membership will be included free with your paid subscription for a limited time only.

You are guaranteed free membership for the duration of any subscription paid for prior to December 31, 1988. After that date, a small additional charge may be levied.

So why not lock in free membership for as many years as you wish by extending your subscription now?



tion between bit planes when they are grabbed from successive frames.

Once the 16 level digitization mode is up and running, LIVE! lets you use mouse tinting to modify the appearance of the image. Moving the mouse up or down shifts the overall luminance of the image to white or black. Clicking the left mouse button cycles the display through the 12 built-in color maps, ranging from the default TV grays to a garish crayon as well as a color negative palette and a gray negative palette. Once a map is selected, left to right mouse movement cycles the hue of the picture, and vertical mouse movement, while pressing the ALT key, increases or decreases color saturation.

There are two ways to save images from LIVE! Single images can be frozen and saved in IFF format by tapping the space bar, or a sequence of images can be captured into RAM. The number of images which can be captured depends on the amount of memory you have and the display mode. We captured thirty-one 16 level, non-interlaced images with 1½ megabytes of RAM. Once in memory the sequence can be viewed or saved out to disk in a compressed "riff" format. To extract individual images from the captured sequence you must use the public domain Playriff program which is supplied on the disk. The source code for this program is included as well. Playriff lets you show complete sequences which are saved as riff files, examine individual frames in a sequence, save single frames from a sequence in IFF format, and create riff files from sequences of IFF files. You can use Playriff to distribute your own videos created with LIVE!

Several other display modes are available which can enhance the appearance of the image. The smooth images option reduces the staircasing or jaggies which affect low resolution images. The digitization rate is slowed down by this option. Interlace can also be turned on if your VCR needs to see an interlaced image. Simple interlace does not add any data to the display; it merely doubles up the number of lines. True interlace can be selected to generate 320 by 400 pixel images. True interlace slows down the digitization rate to about 7½ frames per second.

LIVE! lets you digitize in color from an NTSC signal. Simple color is a five bit plane, 32 color digitization in either 320 by 200 pixels or 320 by 400 interlaced pixels. The frame rates for these modes are 12 frames per second and six frames per second. Ghosting is more noticeable with moving images in the color display modes. Since the digitizing process leaves very little time for processing the data, the color images are not likely to show true colors on the first try. The colors can be manually adjusted for better accuracy.

Last but not least, LIVE! lets you grab images in the 4096 color HAM mode. The frame rate for HAM images is about four frames per second. A HAM image is actually composed of 12 bit planes or four bit planes per color. The 12 bit planes are then processed into the actual six bit planes which are needed by the HAM display. The complexity of the HAM image structure makes it impossible to completely process the image in real time. Thus the HAM display does not look its best as the images are cycled. Prior to saving a single HAM image, you have the option of processing the data. This is done in two steps, smooth and sharpen. Only single HAM images can be grabbed, as the capture option is not available in HAM mode.

LIVE! has a seemingly endless bag of tricks. It can be used with a genlock device to mix a digitized image with a genlocked image. A menu option lets you change the border color, which is also color zero in the Amiga's palette, and consequently the portion of the screen in which the genlocked image will appear. Changing the border color can also produce some interesting effects even without a genlock device.

If you are digitizing with a video camera, try pointing it at the screen. The resulting video feedback effects will be like nothing you have ever seen without the benefit of LIVE!

Third Party developers are starting to use LIVE! in their own applications. Perhaps the most striking application has been *The Mandala* from Very Vivid (302-1499 Queen St. West, Toronto, Ontario, Canada M6R 1A3; phone 416-537-7222). *The Mandala* uses LIVE! to let a live performer interact with the Amiga to generate music and control synthesizers and other musical instruments. We first saw a demonstration of *The Mandala* at the World of Commodore in December 1986. Other applications for LIVE! include image recognition in industrial applications.

The latest third party application of LIVE! which we have seen is with *Fantavision,* an animation package from Broderbund (17 Paul Drive, San Rafael, CA 94903-2101; phone 800-527-6263 or 415-492-3200). *Fantavision* lets you grab a LIVE! image and uses it as a background for your animation project.

A-Squared appears to be embarking on a program of regular software upgrades. The package includes a checklist and questionnaire of software features you would like to see. You can also subscribe to one year of quarterly software updates for $50 or buy a single update for $25. If you are wondering just how committed A-Squared is to this update program, consider this. As we were finishing up this review we received a beta copy of the next LIVE! software update. This revision included overscan capabilities with a 368 by 240 pixel display or 480 vertical pixels with interlace turned on.

How Much Resolution Is Enough?

The digitizers currently available for the Amiga produce images in every possible display mode. The display mode to use depends on your application and the source of your video signal. A high quality monochrome camera is able to generate sufficient detail to take advantage of the Amiga's highest resolution display modes. However, the horizontal resolution of most home VCRs is less than 300 dots. The resolution of the camera, which is part of a good quality camcorder, may go as high as 350 dots across. The effective detail of broadcast television is also about 300 dots.

Keeping this in mind, it is obvious that the Amiga's low resolution display mode will be adequate for use with the color composite video sources available to home users. Professional quality studio equipment will be required to provide a signal which can take advantage of the Amiga's high resolution display modes.

INFO *magazine*

THE FIRST AND LAST WORD FOR COMMODORE & AMIGA ENTHUSIASTS

"...**INFO** *Magazine, the highly- respected* **Consumer Reports** *of the Commodore marketplace... We thank* **INFO** *Publisher Benn Dunnington for covering our segment of the marketplace in his usual hard-hitting style. ...the toughest review board in the Commodore market."*

-AHOY! Magazine

1st In 1983 (three years before the term "Desktop Publishing" was coined by Aldus Corp.), **INFO** became not only the **FIRST** magazine to be entirely "Desktop Published", but "Desktop Managed" as well. Today, **INFO** is still the only national Commodore/AMIGA magazine which is produced and managed exclusively with the very hardware and software products which it covers

---

1st **INFO** was the **FIRST** magazine to publish an actual AMIGA- generated screen display (#7, June/July, page 47. A spinning 3D cube controlled by the Soniture Space-Pen!)

1st **INFO** is the **FIRST** and only magazine to investigate and document the untold and unflattering story of COMPUTE! Magazine's origins and rise to power, and the injustice done to one of the industry's true unsung pioneers. (Issue #15, July/Aug '87)

1st **INFO** was the **FIRST** and only Commodore mag to turn thumbs down on the ill-fated plus/4 computer when it was first introduced. INFO's critical review and warning (Issue #5) saved many **INFO** readers expense and frustration while the rest of the industry sang the PLUS/4's praises.

1st **INFO** was the first magazine to break the story on the current wave of software viruses (Issue #18, Jan/Feb '88) AND publish a cure. Now lots of magazines are doing pieces on viruses, but for many of their readers, the damage may already be done.



And NOW, for the first time, **INFO** is accepting credit-card orders over the phone with your **VISA** or **MASTERCARD**, making it easier than ever to be one of the first to know what's happening in the world of Commodore and AMIGA computing! AND REMEMBER, **ONLY INFO SUBSCRIBERS** enjoy these extra benefits:

- Earliest delivery of **INFO** (up to 2 weeks before newsstand)!
- Substantial savings (over $21 on a 3 year subscription)!
- The **INFO WRAP-UP** (extra pages of **INFO** for subscribers only)
- The **INFO "Nerd-Pak"** (official, 100% vinyl pocket protector)!

VISA

MasterCard

CALL NOW: (319) 338-0703 (1YR:$20 / 2YR: $37 / 3 YR: $50)



Samples of LIVE!'s simple color (five bit plane, 32 color) display. Since the digitizing process leaves little time for processing the data, images may not show true colors on the first try. *READER SERVICE NO. 190*

Overall, LIVE! does a good job of digitizing sequences in very close to real time. It is the only unit in its price category which can perform this operation. With a reasonably stationary image, LIVE! can generate high quality, low resolution interlaced digitizations. In any case, LIVE! sequences can be easily touched up by a paint package.

A-Squared Distributions Inc., 6114 La Salle Avenue, Suite 326, Oakland, CA 94611 (phone: 415-339-0339).

Decisions

The real hard part will be choosing which video digitizer is the one for you. Each of the units we have looked at has features and options which are not available on any of the others. Digi-View supports the greatest variety of the Amiga's display modes. Images digitized with Digi-View can have more detail than those from any of the other units. In addition, Digi-View's image processing software is excellent. The Digi-View module and software is the least expensive of the units we have seen; however, the price goes up if you include the cost of an RS-170 video camera. Of course, Digi-View is not the unit to choose if you are interested in real time frame grabbing.

Perfect Vision was the only unit that could grab a complete four bit plane, 16 level gray scale image in real time. Although limited to black and white, the resulting images are very well defined with excellent tonal rendition. Perfect Vision can also do color digitization by combining three color separations, but not in real time. Perfect Vision's moderate transfer rate of two frames per second is not fast enough to create digitized sequences in real time. However, some experimentation with the slow motion controls on a good quality VCR may overcome this limitation.

LIVE! is the only unit which can capture real time image sequences in color, gray scale, or HAM display formats. Its fast operation makes it the most suitable of the three for special effects. Although it does work at high frame rates, keep in mind its limitations when it comes to the accuracy of single frames (most of these limitations disappear if you are working with a fixed image with LIVE!) LIVE! is probably the unit you will want for most desktop video applications.

Of course these three units are not the only options available to Amiga users. By the time you read this there may be some additional ones available. Progressive Peripherals is very close to shipping their FrameGrabber ($495). The information currently available on FrameGrabber indicates that it will capture color images in 1/30th of a second and black and white images in 1/60th of a second. The supported screen resolutions will range from 320 by 200 pixels to 640 by 400 pixels including a 352 by 240 pixel overscan display and HAM mode; however, the display modes for the various resolutions are not indicated. Since FrameGrabber interfaces via the parallel port, its frame transfer rate between the digitizer and the computer will probably be on the order of 20 seconds. A similar video digitizer is being developed by Impulse, Inc., 6870 Shingle Creek Parkway #112, Minneapolis, MN 55430 (phone: 612-566-0221).

A possible snag in the delivery of the stand alone frame grabbers is the availability of low cost RAM. A unit which can grab an interlaced HAM image in real time will require at least 128 kilobytes of RAM. We expect these units to be fitted with a quarter megabyte. When these units were first conceived, a quarter megabyte of dynamic RAM sold for about $25. At the present time the same RAM is about $100. The manufacturers may be reluctant to commit themselves to the purchase of production quantities if they expect RAM prices to fall in the near future. This could delay shipment of the units even after their designs have been finalized.

Also in the wings is the Video Toaster (approximately $800) from NewTek. We do not have complete specifications on this device at this time. A NewTek spokesperson has indicated that the Video Toaster will install on the Amiga's expansion bus. NewTek intends to provide the unit for all three models of the Amiga. The Video Toaster will contain its own frame buffer and will be able to digitize full broadcast quality NTSC video sequences in real time. The unit will have no fewer than 100 special effects built in, and it will include a genlock device. □

PHOTON PAINT
MicroIllusions
Amiga with 512K
Disk; $99.95

Photon Paint is a powerful paint program which turns the *Deluxe Paint II-Digipaint* competition into a three horse race. It does so through a blend of features, some found in *DP II,* some found in *Digipaint,* some unique.

Despite its advanced features there are inconsistencies: several basic tools or functions have been omitted and processing speed isn't always up to par. There's no valid reason for this, other than a need to get the program to market. Pressure is always on developers to get a good product out the door and then to fine tune it with an upgrade. Sometimes this strategy works, sometimes it leaves the product weak compared to the competition. With that in mind, let's put *Photon Paint* through its paces.

The Basics

Photon Paint requires 512K RAM; one megabyte is needed for the 320 by 400 display mode. An external floppy drive is recommended. The program's lack of copy protection makes a hard drive feasible, but not necessary.

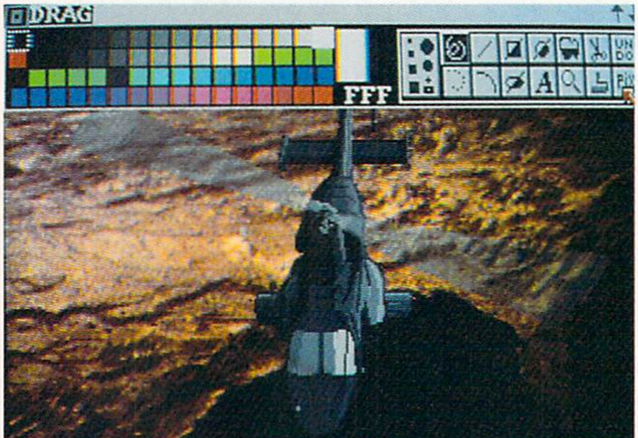
Hold and Modify (HAM) mode is supported under the NTSC or PAL (West European) television broadcast standards. So is overscan and interlace, if your monitor can handle the load. Images are produced and stored as IFF files, making *Photon Paint* compatible with most Amiga graphic software. A quick reference card, which outlines the keyboard equivalents to pulldown menu options, is provided. It's a useful item to have around.

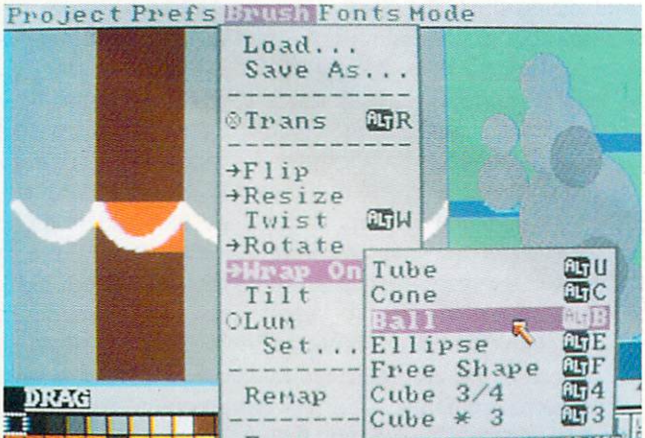
The manual looks nice–a professionally printed piece on coated paper. Its organization is somewhat unusual, however, as the reference section precedes the tutorials. (At least the introduction is at the beginning.)

While that is a small eccentricity, the lack of screen illustrations isn't. After all, this is a program for the Amiga, and more to the point, this is a program about illustrations.

Lack of a glossary (to explain terms such as NTSC, PAL, interlace, HSV, etc.) is bad enough; lack of an index is inexcusable. Without a glossary, novices will remain that way, or worse yet, be turned off. The latter deficiency makes it difficult to find a precise function or term. You must either scan the entire manual, guess, or become so well acquainted with the manual that you know every line on every page. In that case, you wouldn't need to look anything up anyway!

As you can surmise from my remarks thus far, the manual looks better than it is. It has hard-to-find (though useful) information and it is poorly arranged and cross-referenced. Instead of







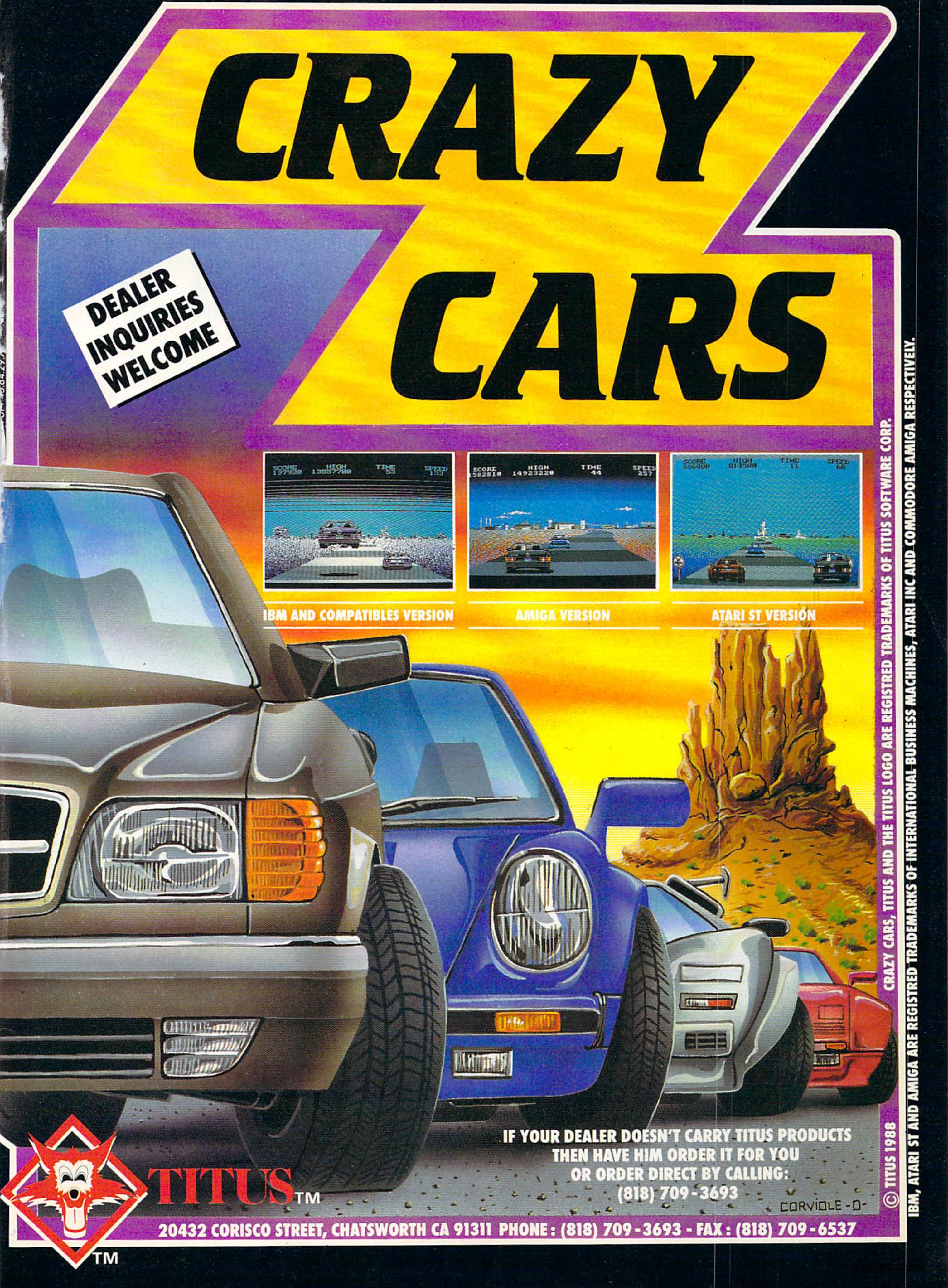
Photon Paint: *capable, but flawed.*
READER SERVICE NO. 197

spending the money on production, the focus should have been on content.

Features

PP makes it possible to paint in "exact color," an option which prevents automatic modification according to the background color. There are three types of fill functions; brushes can be stored, loaded, flipped, resized, rotated (in single degree increments), and tilted (for a two-dimensional effect simulating perspective). Dithering comes standard, along with the ability to blend a brush or object into the background. The latter is not a fade or transition, as this is a static paint program–it's more a camouflage merge.

The two part menu bar can be resized, removed, or recalled–whatever you need to get the job done the way you like to work. One of the real kickers concerns advanced brush manipulation, twisting, selectable transparency, perspective (pseudo 3-D), and the winding or wrapping of brushes onto imaginary shapes. Anyone can cut a brush from an illustration or load a


CRAZY CARS
DEALER INQUIRIES WELCOME
IBM AND COMPATIBLES VERSION
AMIGA VERSION
ATARI ST VERSION
IF YOUR DEALER DOESN'T CARRY TITUS PRODUCTS THEN HAVE HIM ORDER IT FOR YOU OR ORDER DIRECT BY CALLING: (818) 709-3693
TITUS™
20432 CORISCO STREET, CHATSWORTH CA 91311 PHONE: (818) 709-3693 - FAX: (818) 709-6537
© TITUS 1988 CRAZY CARS, TITUS AND THE TITUS LOGO ARE REGISTRED TRADEMARKS OF TITUS SOFTWARE CORP.
IBM, ATARI ST AND AMIGA ARE REGISTRED TRADEMARKS OF INTERNATIONAL BUSINESS MACHINES, ATARI INC AND COMMODORE AMIGA RESPECTIVELY.

READER SERVICE INDEX

For **free additional information** about the products of any of the companies listed, circle the corresponding number(s) on the adjacent card.

Page	Company	Svc. No.
9	Absoft	229
55	Absoft	203
55	Absoft	219
47	A-Squared Distributions Inc.	190
8	Access Software Inc.	184
C-4	Access Software Inc.	185
11	Accolade	233
54	Accolade	196
36,37	Aegis Development Inc.	214
58	Aegis Development Inc.	193
82	AlohaFonts	237
24	Artworx	198
6	ASDG, Inc.	235
57	ASDG, Inc.	218
67	Brown-Wagh	223
4	Cinemaware	206
20	Cinemaware	201
21	ComputAbility	211
26-29	Computer Direct	212
79	Comp-U-Save	225
17	Data East USA, Inc.	182
13	Discovery Software Int'l	207
24	Discovery Software Int'l	199
12	Electronic Arts	236
31	Free Spirit Software Inc.	191
18-19	Go Amigo	221
10	Gold Disk	231
10	Howard W. Sams & Co.	230
64	Infinity Software	208
45	INFO Magazine	210
15	Ketek	227
32-33	Lyco Computer	186
5	Lynn's Luna	226
48	Microillusions	197
69	MicroSearch, Inc.	224
56	Micro-Systems Software	192
23	Montgomery Grant	183
38	NewTek	188
C-2	New Horizons Software	180
65	New Wave Software	216
35	Oxxi, Inc.	215
61	Phoenix Electronics, Inc.	220
59	Pioneer Computing	222
61	Progressive Peripherals	194
24	Psygnosis	200
14	Q-Link	217
46	Recovery!	–
11	Scorpion	232
20	SubLOGIC	202
40	SunRize Industries	189
C-3	SunRize Industries	181
7	Supra Corporation	187
39	The Other Guys	213
54	The Software Toolworks	195
11	Titus Software Corp.	234
49	Titus Software Corp.	205
51	Titus Software Corp.	209
53	Titus Software Corp.	204
74	Wedgwood Rental	228
43	*Ahoy!* Access Club #1	–
50	*Ahoy!'s AmigaUser* Subscription	–
72	*Ahoy!* Binders	–
82	*Ahoy!* Access Club #2	–

The publisher cannot assume responsibility for errors in the above listing.

SUBSCRIBE TO

Ahoy!'s AmigaUser

Each edition of *Ahoy!'s AmigaUser* provides beginning to advanced users with a densely packed collection of new product information, hardware and software reviews, type-in programs, and articles covering the gamut of Amiga applications.

Why risk missing even a single issue?



As of our November issue, *Ahoy!'s AmigaUser* will cost $3.50 on the newsstand. But you can pay less than $2.50 per issue by subscribing now for one year (8 issues) for just $19.95.*

Save even more by taking two years for $37.95.*

This special rate is guaranteed for the duration of your subscription, regardless of price increases. And as a subscriber, you're entitled to special buying privileges as a member of the *Ahoy!* Access Club (see page 43).

Fill out and return the adjacent postpaid coupon today!

*Canadian and foreign prices higher


FIRE AND FORGET
THE FUTURE IS IN YOUR HANDS! FIRE AND FORGET! NEVER LOOK BACK
YOU ARE OUR ONLY CHANCE...
DEALER INQUIRIES WELCOME
TOP SECRET
SOON AVAILABLE FOR COMMODORE 64/128
IF YOUR DEALER DOESN'T CARRY TITUS PRODUCTS THEN HAVE HIM ORDER IT FOR YOU OR ORDER DIRECT BY CALLING: (818) 709-3693
AMIGA VERSION
IBM AND COMPATIBLES VERSION
ATARI ST VERSION
TITUS™
20432 CORISCO STREET, CHATSWORTH CA 91311 PHONE: (818) 709-3693 - FAX: (818) 709-6537
© 1988 TITUS SOFTWARE CORP., TITUS AND THE TITUS LOGO ARE REGISTERED TRADE MARKS OF TITUS SOFTWARE CORP. COMMODORE 64/128, IBM, ATARI ST AND AMIGA ARE REGISTERED TRADEMARKS OF COMMODORE ELECTRONICS LTD, INTERNATIONAL BUSINESS MACHINES, ATARI INC AND COMMODORE AMIGA RESPECTIVELY
DREAM-UP 45.84.29.79

brush from another program and wrap it around a cone, ball, ellipse, or a custom pattern. While performing these brush contortions, users can also specify light source, light intensity, and shading factors. The lighting features also work with fonts—a great way to create that custom look without using a font editor. Fonts, those supplied with the program or from another source, can be portrayed in outline or reverse image modes.

True artists will love the ability to specify the 16 colors that produce the basis for HAM output, as well as the power to change the 64-color palette by RGB (Red, Green, Blue) and HSV (Hue Saturation Value) sliders. Mix until the desired colors appear—there's no messy cleanup when *Photon Paint* is involved.

Photon Painting

PP is rather intuitive. Most of the icons are visually self-explanatory, particularly to seasoned electronic artists. (There are exceptions to this, but they are icons which change according to the number of mouseclicks used on them.)

Except for cursor positioning, the main options are available through (mostly) mnemonic keyboard alternatives. Where there is a duality of purpose (with slight variations), upper and lower case keystrokes are used to differentiate the functions. For example, "e" triggers a hollow ellipse and "E" triggers a filled ellipse. Not all the associations are this clear-cut, but the exceptions are nothing to worry about.

The magnify mode is interesting; it's like working with Inspector Gadget, the cartoon character with interchangeable parts such as springs in his arms, skis in his feet, and a helicopter rotor in his hat.

Besides the traditional "pick a location and magnify" capabilities, the magnify mode has arrows for four-directional scrolling. The window can be moved via the drag bar or resized. Clicking on the plus sign increases magnification, the minus sign the reciprocal. Max and Min automatically jump to the greatest and lowest powers of magnification; "M" opens up another magnification mode and "B" adjusts the right-hand border after working in that area.

While in this mode to clean up a stray line, I ran across a problem. I had a devil of a time getting my brush to affect only certain pixels. Adjacent pixels were changing colors by association, fraternizing with colors I wanted to change. New colors began to appear on the screen. So I flipped back and forth between "exact color" and regular mode. This took care of most of my problems, though I was completely powerless against several pixels. My brush was under alien control, or something along those lines.

An offset option corrects for improper displays and the use of overscan or interlace modes. This is more important than you can imagine. Part of the menu bar disappeared from the top of the screen when I switched back and forth between resolution modes. Adjusting the picture to better fit the screen took care of my anxiety attack.

Another wild feature concerns palette changes. New colors will not affect those already onscreen, making it possible to work with all 4096 colors during a single masterpiece. This helped me touch up an image scanned in with *Live!*

Some of the processes are sloooow. Changing the background color takes five seconds or better. Using the arc tool can be an exercise in existentialist patience as you wait for the line to track the mouse and the three mouseclicks needed to designate the arc.

Smearing a loaded or clipped brush is a common feature on the Amiga, but not with *Photon Paint*. I was unable to smear my carefully crafted brushes. If the ability is in the software, and I doubt it, it is so well hidden that only the most adventurous will uncover it. (Here's where that index would have saved plenty of time and frustration.)

Now to come full circle. At the start of the review I mentioned missing functions. *PP's* cavalcade of commands does not include a spray gun or fill pattern. Didn't the designers and programmers check out the competition or ask end users what they wanted? Evidently not, as this stuff has been around since *MacPaint*.

To Buy or Not to Buy

No, *Photon Paint* is not the answer to all your artistic yearnings. It is capable, but flawed. It has several very strong suits and a Joker or two.

If you need advanced brush manipulation or have special HAM requirements, this is the program for you. If not, it may still fit the bill; however, don't overlook the other products just because this is the newest one on the market, or because you can get a particularly good deal on it.

MicroIllusions, 17408 Chatsworth Street, Granada Hills, CA 91344 (phone: 800-522-2041 or 818-360-3715).

—Ted Salamone

MAVIS BEACON TEACHES TYPING
The Software Toolworks
Amiga with 512K
Disk; $49.95

After reading the documentation that came with this package, examining the program in detail, and studying the back of the box, I still do not know who Mavis Beacon is. A qualified typing instructor who endorses this program? A talented programmer who wished to remain anonymous? A completely fictional character?

On the front of the box is an attractive careerwoman standing in front of a bunch of skyscrapers. Could this be Mavis? A relative? A passerby who posed for the photographers? We may never know the answer.

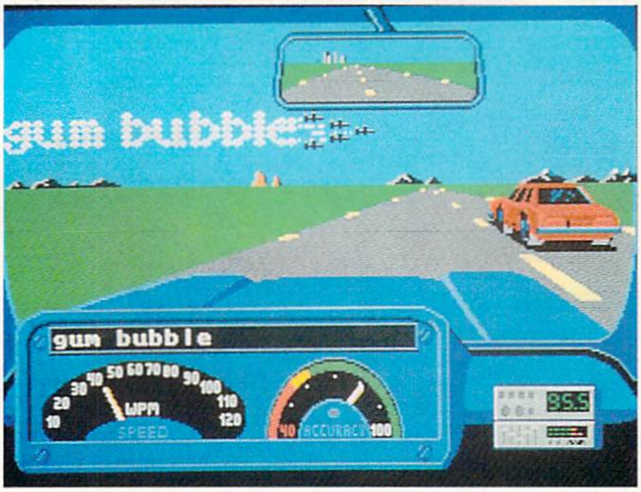
This typing tutor is another highly intelligent release from the company that produced *Chessmaster 2000.* It is challenging and well-designed, meriting commendation in a field of software where the race for distribution usually overcomes the necessity for refinement. After seeing many programs that do not take advantage of the Amiga's capabilities, it's pleasing to find a product that has been subjected to such obvious quality control by its creators.

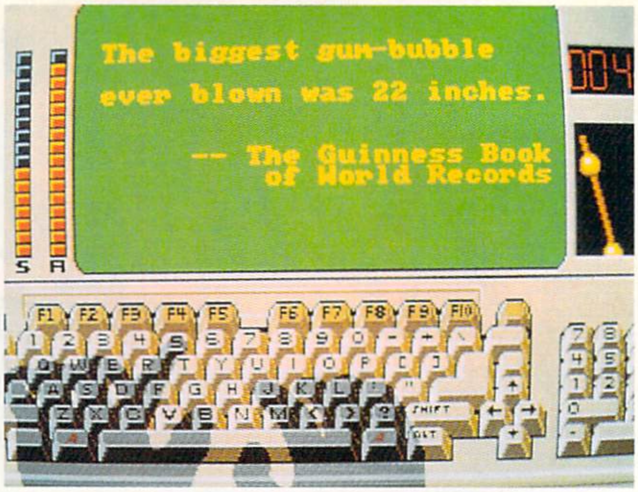
Mavis Beacon makes learning touch typing easy and entertaining. Although the program constantly strives to challenge the student by monitoring his or her progress, it is wisely generous with rest periods and diversions to keep things from getting monotonous.

There are essentially two different modes of instruction: drills, featuring timed and/or scored practice on the keyboard, and arcade action, where the student attempts to outrace a pace car by typing in random phrases as they scroll across the screen.

I wish there had been just a little


OFF SHORE
WARRIOR
VIOLENCE ON THE HIGH SEAS, THE ULTIMATE TEST OF MANHOOD
AMIGA VERSION
IBM AND COMPATIBLES VERSION
ATARI ST VERSION
DEALER INQUIRIES WELCOME
IF YOUR DEALER DOESN'T CARRY TITUS PRODUCTS THEN HAVE HIM ORDER IT FOR YOU OR ORDER DIRECT BY CALLING: (818) 709-3693
THE YEAR IS 2050.
VIOLENCE AND TERROR HAVE TAKEN OVER THE WORLD, CIVILIZATION HAS DISAPPEARED,
VIOLENT STREET SPORTS ARE NOT ENOUGH TO SATISFY THE BLOOD LUST OF A NATION.
A NEW SPORT HAS EVOLVED. YOU ARE AN OFF SHORE WARRIOR, ANYTHING GOES.
THE BATTLE CAN BRING YOU FAME OR DEATH... THE ONLY RULE IS TO WIN WHATEVER THE COST.
CAN YOU MEET THE CHALLENGE AND BECOME THE SUPREME OFF SHORE WARRIOR
A WORLD AWAITS, PREPARE FOR THE ULTIMATE TEST...
TITUS TM
© 1988 TITUS SOFTWARE CORP., OFF SHORE WARRIOR, TITUS AND THE TITUS LOGO ARE REGISTERED TRADE MARKS OF TITUS SOFTWARE CORP. IBM, ATARI ST AND AMIGA ARE REGISTERED TRADE MARKS OF INTERNATIONAL BUSINESS MACHINES, ATARI INC AND COMMODORE AMIGA RESPECTIVELY
20432 CORISCO STREET, CHATSWORTH CA 91311 PHONE: (818) 709-3693 - FAX: (818) 709-6537





Mavis Beacon's *arcade drill (left) and Guinness Book quotes help teach typing.* *READER SERVICE NO. 195*

more variety–maybe another arcade game to spice things up. But as it stands, there is more than enough to keep a student from falling asleep. The arcade game is nothing revolutionary in terms of graphics, but that is to be expected. This is an educational program so it can't be *too* much fun.

The drills feature shadow hands that press the proper keys in silhouette on the screen to demonstrate what your fingers are doing. (You're not supposed to be looking at your fingers.) This is one of the best touches, because you can align your fingers on the proper home keys without looking down if you concentrate on the shadow hands. The drill screen also uses a musical metronome to help your rhythm, and a bar graph display that visually demonstrates your current speed, accuracy, and completed work.

After the drills are over, a host of 3-D graphic screens chart your progress. These bar graphs make any improvement on your part quickly evident.

You will be amazed and unnerved by the intelligence of the interface. It guesses when you're getting tired, no doubt by finding the average speed of keystrokes, and changes the type of instruction in order to keep you on the edge of your seat. It can also tell if you're upset or just banging away in frustration. The algorithms for this sort of artificial intelligence have existed for 20 years, but this program and *Chessmaster 2000* represent two of the first attempts of software manufacturers to implement these concepts. Science fiction becomes science fact.

I give high marks to this quality release from The Software Toolworks. It's fun, inventive, and educational. If nothing else, the included documentation on the history of touch typing will hold you enthralled for at least a half an hour. It's a nice bonus on top of what was already a smart purchase.

The Software Toolworks, One Toolworks Plaza, 13557 Ventura Blvd., Sherman Oaks, CA 91423 (phone: 818-907-6789). *–Cleveland M. Blakemore*

GRAPHICS STUDIO
Accolade
Amiga with 512K
Disk; $49.95

Although I normally think of a studio as a skylit room with drafting tables and a variety of protractors and pencils ready at hand, I'll concede at least a part of that vision to Accolade's *Graphics Studio*: all the tools are ready to use, some of them ready in a unique way.

In fact, the emphasis on tools and the ways in which they are used is the distinguishing feature of *Studio,* making it more than a "me-too" painting program and causing us to wonder that it wasn't named Graphics Toolbox.

Pulldown and pushup menus are used for selecting drawing tools, and the menus are keyed with icons that will be familiar to anyone who has used an Amiga painting program–and will lend themselves to instinctive interpretation by those who have not. Pushup menus are new: they reside at the bot-



Graphics Studio *provides a palette of 32 colors, five fill patterns, and drawing tools both common and uncommon.* *READER SERVICE NO. 196*

tom of the working screen, and when selected push a row of selections up into the working areas.

Obviously, they are the reverse of pulldown menus and would hardly be worth noting were it not for the fact that their arrangement allows for more tools to be displayed and for the icons of each tool to be larger. A touch of the right mouse button causes all tool icons to disappear, showing the full screen. Further, with or without the tools being displayed, there is at the bottom of the screen a scrolling tool, and this does bear a closer look.

Although every painting program capable of producing a full-page (8½ x 11") picture has some scrolling ability, it is usually a slow process, for the screen and the picture upon the screen must be redrawn as scrolling is invoked. With *Graphics Studio,* the entire page seems to exist as a virtual screen, which is a semi-technical way of saying that the entire page is always there and that your monitor constitutes a window behind which the page is moved. The result is faster and smoother screen scrolling than is currently available in any program I've seen. This is a plus for those to whom any waiting state is an interruption of the creative process.

When working in a real studio environment, you may have one or more tools that will be used repeatedly; rather than return them to your toolbox, you'd probably keep them close at hand until the drawing was finished. This is a human factor that received consideration by the designer of *Graphics Studio.* As an example, suppose you go to the Line Draw menu. Clicking on the icon drops down a menu that gives you four choices: straight lines, connected lines, radiating lines, and constrained lines. Select the one with which you wish to work, and notice that that icon now becomes the menu icon.

You deselect by choosing any other tool, but when you're ready to reselect your line tool it is there without the necessity of opening the menu. Click on it once and you're ready to go. Granted, it is a small point in that it will save you only one mouseclick and a few seconds; still, it is indicative of the way *Graphics Studio* has been arranged for user convenience rather than programmer expediency.

Your palette consists of 32 colors arranged at screen bottom, and any color can be modified by editing the RGB values. So, in a technical sense you have the Amiga's full 4096 colors from which to choose—but you can still only work with 32 at a time.

Five fill patterns are also displayed at screen bottom. These can be the default program patterns—which can be edited—or patterns made from a section of your picture. If it were necessary to fill several parts of your picture with desert sand, for example, you would need to create only a small area, then capture and save it as a pattern which could be reused as necessary. Again, having five patterns immediately selectable is in keeping with the theme of having your tools ready at hand.

Tools for drawing are both common and uncommon: there are freehand lines, and there are the straight lines discussed above. There are squares and rectangles that can be outlined, filled, and concentric; circles and ovals that are outlined, filled, and concentric. There are also a variety of line thicknesses for your brush, as well as several brush shapes; there are unconventional "fills" where your outline is filled with the currently selected paint and fills where your outline is filled with horizontal or vertical lines for a more delicate shading effect.

Rotate Colors dips your brush into each color of the palette, in turn, as you're drawing, while Random Colors does the same but in no particular order. Either option adds an op-art look to even simple shapes and figures, and if Color Cycling is selected you can achieve a look of rudimentary animation.

Drop shadows are another tool for bringing depth to your paintings, and can be used with any drawing tool. The offset of the shadow can be altered by adjusting the X-Y coordinates.

Whatever you're drawing, it can be finely touched up by using the zoom mode. In a portrait where the eyes just don't look quite right, you can magnify that portion of the picture and work on it one pixel at a time. Because of the split-screen feature invoked by choosing Zoom, you'll also see your picture in actual size and thus be able to judge the effects of your pixel editing.

Other tools include Text, in which you have full use of the Amiga fonts to add text or captions to your paintings, and a Clip Screen which resides behind your work screen and can function as a clipboard.

Once you've completed a painting or drawing, the most obvious next step is to print it, and *Graphics Studio* supports all the printers from the Work-

bench 1.2 Preferences library. But it also includes a featured called SlideShow which, as its name probably implies, allows you to write scripts detailing the order in which your works will be shown, the amount of time each will be displayed, the screen resolution to be used, and whether or not to use color cycling for an animated look. Since SlideShow loads all pictures specified into RAM, it will help to have memory expansion if you intend to present lengthy displays.

In its documentation, *Graphics Studio* is clear and understandable and the information is presented in what seems to me to be a logical manner (though an index would be a great help). There are a large number of typos, but none that will get you into trouble. Though the disk is copyable and can be installed on a hard disk, the Key Disk system is used, which means that when booting your working copy, the original will be requested for verification.

Our one quarrel with the program has to do with printing. Since *Graphics Studio* boots directly into the program, you have no chance to set up your printer until you exit the program and run Preferences from CLI. Alternatively, you could boot your working copy of *Graphics Studio* with Workbench and save your Preferences selections. It is a small inconvenience but, since the documentation says almost nothing about printing, it is one that might drive a novice to distraction. Other than that, *Graphics Studio* is pretty good.

But we *still* wonder why they didn't call it Graphics Toolbox.

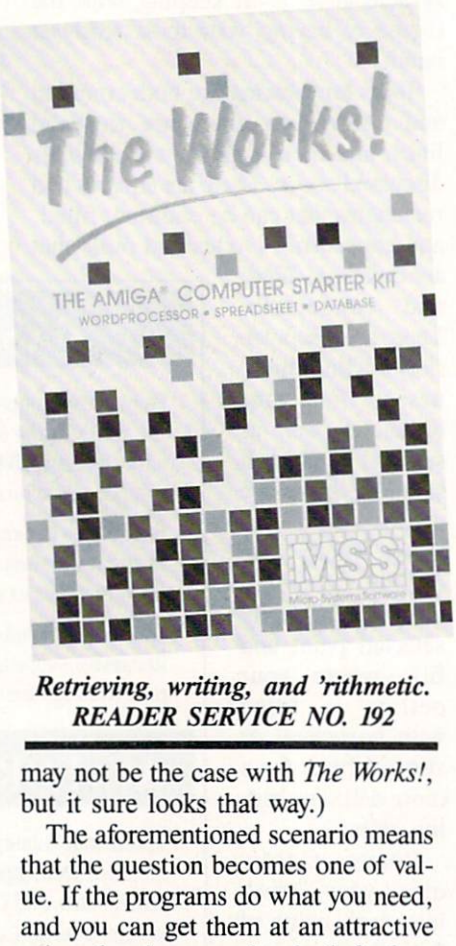
Accolade, 20813 Stevens Creek Blvd., Cupertino, CA 95014 (phone: 408-446-5757). *—Ervin Bobo*

THE WORKS!
Micro-Systems Software
Amiga with 512K
Disk; $199.95

The Works! is a compilation of *Scribble!*, *Analyze!*, and *Organize!*, a family of first and second generation word processing, spreadsheet, and database management programs for the Amiga. As such it has a lot in common with the typical "Greatest Hits Collections" advertised on television. The connection is simple: more for your money!

The "original artists" are featured in this pricebusting extravaganza, as noted in the product's ads. Buying the components separately would run up a list price tab of $349.85! Whew! Sounds great? Well, it may not be great, but it sure is good.

Software publishers often resort to this bundling/price reduction marketing technique when they feel the product has serious competition and they are unable to upgrade the product quickly enough to counter the threat. Provising more bang for the buck is an ideal tactical maneuver to retain market share and keep the product moving while the strategic answer (an upgrade) is developed. In other words, one generation funds the next. (This may not be the case with *The Works!*, but it sure looks that way.)



Retrieving, writing, and 'rithmetic.
READER SERVICE NO. 192

The aforementioned scenario means that the question becomes one of value. If the programs do what you need, and you can get them at an attractive price, there's no need to look further.

Quickstart

For readers who only want the "skinny," here it is: *The Works!* works well. It is extremely cost effective, especially when considering street prices.

Though the word processor and database are fine products in their own right, the spreadsheet really shines. Since the programs have been sold separately for some time, the bugs are pretty much worked out; dealers should be able to provide knowledgeable, in-depth support; and chances are user groups or friends will be familiar with them.

All in all, *The Works!* is better than expected.

Details

The "3 Amigos" have been placed on one very full, unprotected disk. Specific instructions for booting *The Works!* have not been included, as the individual program manuals are still in use. (As a matter of fact, except for the splashy cover and the ads, there are no references to *The Works!*)

This lack of startup info is a problem only if you are unfamiliar with the Amiga; unfortunately, the collection is billed as "The Amiga Computer Starter Kit." Whoops—a small, though far from fatal marketing error. In reality, *TW!* is the same as every other Amiga program: just click on an icon or load from the CLI. Each module requires 512K RAM.

Online help across the modules is limited to a few screens illustrating command key alternatives, function key uses, or dot commands for transmitting special codes to printers. F1 or the HELP key calls the assistance.

Keyboard templates and/or quick reference cards are needed to complete the documentation and help facilities.

The Database Dance

Organize! is a solid flat file database manager with good performance and credible limits. It will hold its own against any midrange use.

The manual, which has an occasional screen illustration, features an extensive tutorial section covering database creation, data entry, data retrieval, forms management, search activities, and report functions. The reference section and index are equally good, though a glossary of database terms would be helpful.

Each database is limited to 128 fields, with each fieldname topping out at 10 characters. Field types include text (254 character maximum length), numeric (16), date (8 – MM/DD/YY format), and Yes/No (1). Yes/No is limited to a "Y" or an "N."

Multiple indices can be created,

though only one can be active at a time. This is a logical limitation, not a programming shortcoming.

For data integrity and security reasons, deleted records are merely inactivated. In that condition they are easily reinstated. To actually remove the inactive records from a disk (freeing up the space for other records or databases) you run a pack (purge) function which searches for the inactive flag on a record. Finito!

Besides a forms function useful for creating output templates (masks), *Organize!* supports a *Scribble!*-compatible mail merge routine.

Of major importance is the program's mathematical capabilities. In addition to the impressive list of functions noted below, calculations and running totals can be carried forward during searches or across reports.

Pages 60 to 72 in the manual detail the logical and mathematical operators, the more advanced ones being NOT, AND, OR, >=, <>, </, CHOOSE, IF, ISERR, LN (base e), LOG (base 10), MONTH, PMT (payment), PV (present value), TRUE, VAR (variance), and any trigonometric function. There are about four dozen in all.

Advanced database features allow users the luxury of changing field sizes or adding new ones. There is also a handy Copy function. Searches can be passed through a filter; up to four filters can be prebuilt and stored. Reports are sent to screen, printer, or disk. The search filters can be employed here to limit or restrict the data output. A status function details free RAM and free disk space while a variant illustrates the name of the active database, its number of fields, the record length (in bytes), the number of records, and the size of the disk file (in bytes).

The only flukes appear to concern the search routine. If you activate the Next or the Previous command when at the beginning or end of a file, a "Can't Find Match" message is returned. This should read "End of File" to eliminate any confusion which the first message could create when conducting a filter search.

The next "problem" is more an inconvenience than a true bug. If you state the search filter incorrectly it does not execute and you must restate it in its entirety—the field blanks out, making it impossible to edit the filter.

Scribble!

This word processor was one of the first available after *TextCraft*. At the time it met with a fair degree of success, due to a nice feature set and a lack of serious competition. Today there are several other word processors in the same category and price range (or less); and then there's *WordPerfect*, sitting atop the Amiga WP market like King Kong on Skull Island. Luckily the price point is nowhere near the same, so there is still some value inherent to owning *Scribble!*

The manual is similar to *Organize!'s:* a few screen dumps spread through a tutorial followed by a reference section which primarily discusses the menu options. There is also an overview section which is a cross between the tutorial and the reference section. While this indicates a lack of focus, the damage isn't severe.

Scribble! is an interesting mix—dot commands (à la the original *Wordstar*) married to pull-down menus and keyboard alternatives. The method of embedding printer control codes is less than transparent, certainly when compared to current competitors.

A small (40,000 word) user-modifiable dictionary is provided. However, the means of adding new words is less than ideal; a special program (DICTADD) must be run to combine new words with the original ones in USERDICT. How do you spell kludge?

The actual functions available are impressive, though: Cancel operation, Learn a word, Replace, Skip, Ignore, have the program Guess the correct entry, Correct, and Quit. The reference section (!) contains the spellcheck tutorial and related information. (Just another example of the manual's poor organization).

Despite these shortcomings which make *Scribble!* the weak cog in *The Works!*, the program offers multiple edit windows, a high degree of control over output, multiple styles (underline, bold, italic, and combined), cut, copy, paste, line, page, and strong cursor movement control.

Analyze!

Analyze! is the Yin to *Scribble!'s* Yang—the high point in *The Works!* Version 2.1 sports a well organized and executed manual, from the beginner's and advanced tutorials to the sections on graphs, macros, and math functions. An exceptionally good glossary and index round out this documentor's dream.

Analyze! goes from strength to strength. There are at least eight ways to move the cursor about the worksheet; the list of logical operators is first

class (identical to those in *Organize!)*; and the range of mathematical functions is even more heady. In addition to the advanced ones listed under *Organize!, Analyze!* includes FRAC (fractional part of a cell value), HLOOKUP (horizontal table lookup), and VLOOKUP. This doesn't even touch the basic functions included in both modules.

All menu options have keyboard alternatives; relative and absolute formula creation techniques are supported. Cell ranges can be named, moved, erased, or otherwise manipulated.

The First Summit

As good as that news is, the program's macro (microcomputer automated commands, relative order) capabilities bring *Analyze!* even further. Unfortunately the macros are not of the record and playback variety; they are of the slash/cell type where users enter somewhat esoteric commands in a special area of the worksheet. This is the way *VisiCalc* of yore and *Lotus 1-2-3* handle macros. Newer programs, including word processors like *WordPerfect,* retain the sequence and consequences of each keystroke as entered. This is a more intuitive approach, though each method has its proponents.

Besides driving repetitive functions and executing long strings of commands with just a keystroke or two, these macros can be used to build alternate menus!

The Outer Limits

Analyze!'s graphing functions actually go the macros one better. Users can create four or eight color charts comprising up to six data ranges and three dimensions. Up to four charts can be viewed at once, a mixture of pie, line, x-y, bar, stacked bar, or 3-D (pie or bar).

The 3-D types allow yaw and pitch rotation in single degree increments from 0 to 90 degrees. Except for memory restrictions and limits due to the inherent nature of a chart type, there are no data ceilings.

Once you designate data ranges, resolution, graph number, and type of graph, select the View command. Soon the screen blazes with brilliant colors, especially if an eight color chart has been selected. Flipping between the worksheet and the graph view, users can add labels, modify figures, change ranges, etc.

Changes to cells which are depicted in the graph cause immediate changes to the graphs! This "hot link" dynamic updating is an impressive feat, something touted heavily in much more expansive programs.

Though graph data is normally saved in IFF format, it can be archived in a special format–a provision which actually makes it possible for more than four graphs to be tied to a worksheet. The others are saved to disk and recalled by some simple procedures.

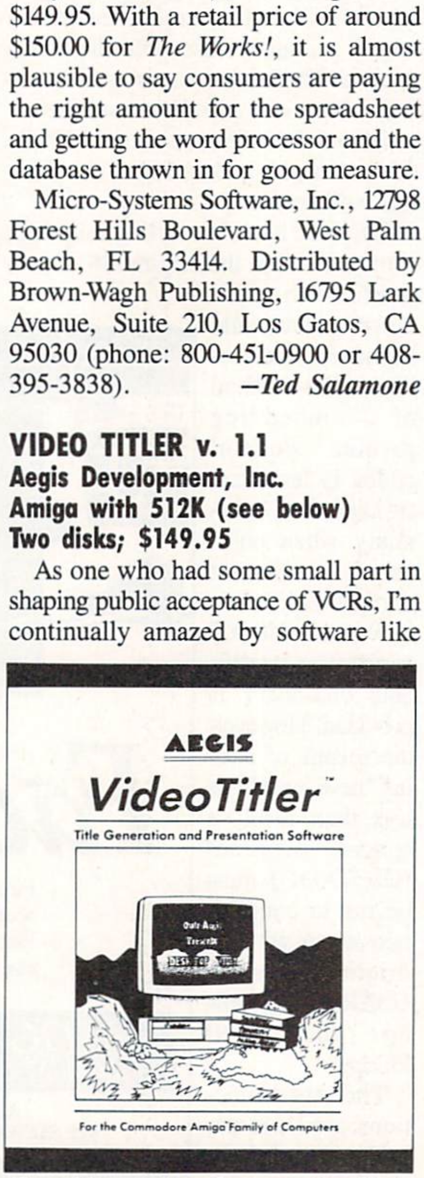
Bottom Line

By itself, *Analyze!'s* list price is $149.95. With a retail price of around $150.00 for *The Works!*, it is almost plausible to say consumers are paying the right amount for the spreadsheet and getting the word processor and the database thrown in for good measure.

Micro-Systems Software, Inc., 12798 Forest Hills Boulevard, West Palm Beach, FL 33414. Distributed by Brown-Wagh Publishing, 16795 Lark Avenue, Suite 210, Los Gatos, CA 95030 (phone: 800-451-0900 or 408-395-3838). *–Ted Salamone*

VIDEO TITLER v. 1.1
Aegis Development, Inc.
Amiga with 512K (see below)
Two disks; $149.95

As one who had some small part in shaping public acceptance of VCRs, I'm continually amazed by software like



For adding text and cinematic effects.
READER SERVICE NO. 193

Video Titler. Had such programs existed four years ago, I'd probably be a very wealthy man. Unfortunately, at the time I was exploiting my discovery that computer graphics could be transferred to videotape, no one was exploiting computer graphics–perhaps because there was no personal computer like the Amiga. Oh, well.

The first thing to understand about *Video Titler* is that it cannot create graphic images, but it can enhance them to a fare-thee-well by adding text, by separating images through a variety of wipes, dissolves, and fades, and by a kind of controlled distortion of the images.

In importing images from other programs, the IFF format is supported, which means you can load pages and brushes created with *Deluxe Paint II* and *Aegis Images.* Further, four video resolution modes are supported–Low, Video, Medium, and High–and these can all be presented in "overscan," a process that flows the picture to the very edges of your screen, eliminating natural borders and causing the end result to look more like a TV picture than one generated by a computer.

Whatever image you choose to import, it acts as a background to the text you will eventually add. It is important to note, however, that the background can be manipulated independently of the text, giving you even more options to make it appear as if you are working with a rudimentary form of animation. Video is not a static medium, and thus these manipulations are very welcome.

As an example, you might select a pastoral scene for a background, superimpose your titles on it, and select the 4/4 quartering option from the pulldown menu. Your background is gradually redrawn (in what resembles a slow wipe) until the pastoral scene appears four times while the size and placement of the text is unchanged. Select 4/4 again and your background will consist of 16 images. Suddenly a pastoral scene has become dynamic.

(Note: although it may not have been intended as such, the slow vertical wipe described above can be put to use, as can many other transitional devices. It is simply a matter of learning them and their timing and then making your transfer to tape a live act rather than

the transfer of a canned script from your data disk. In this way, the dynamic capabilities of *Video Titler* can be expanded.)

In the matter of fonts, you're likely to find yourself feeling like a starving man at a feast, suddenly told to dig in and take whatever you like. In addition to several fonts and sizes from the Amiga Notepad, *Video Titler* provides a roster of PolyFonts which can be stretched and even mirrored; and from outside sources it will support all ZumaFonts and anything made with *Calligrapher.*

Normally that would be enough, but the makers of this program have watched a few hours of TV, at least enough to know that variety is spicy. Toward this end, they've made it possible to enhance any font by such things as transforming it to fat or thin neon, making it the subject of large and small stars (the kind of ray effect you get when viewing a bright object through a diffraction grating), 3-D block letters, drop shadows, and much more—any of them easily selectable from a pop-up menu.

With such a variety of fonts and options, it's going to be difficult to be repetitive to the point of boredom. It would be possible to select only one font and, through the use of the options, fill the screen with text without ever repeating yourself.

Bear in mind, however, that text created for viewing on a TV screen must be readable. Since most of us will be using *Video Titler* (during the creative process) in conjunction with an RGB monitor, remember a couple of tenets:

One, there will be a loss of resolution in the transfer to videotape and there is nothing you can do about it.

Two, your eventual audience will probably be viewing your work on a standard TV or, at best, a composite monitor. Again, you will suffer a loss of resolution.

The rule derived from these tenets is simple: always use the largest letters possible, consistent with putting a coherent message on the screen. (With this in mind, one wonders why Aegis bothered to include Topaz 9 in their font library, but that is a problem they'll have to work out for themselves.)

It's also important to note that if you are using *Video Titler* with studio-grade video equipment, the cautions given above do not apply to any great degree, perhaps justifying the inclusion of Topaz 9 after all.

The unit of composition for *Video Titler* is the screen, consisting of a background and perhaps embellished by also importing some brushes or windows, and overlaying this a text message—whether it might be a title, a commercial announcement, or a home movie transition from the previous summer's beach party to this year's Christmas celebration.

Whatever it may be, once created it should be saved to a diskfile, from where it can be further manipulated during playback by using the second part of *Video Titler*, called VideoSeg. These manipulations will consist of transitions between a series of screens to present a logical and coherent whole, and the transitions are called by such names as wipes, fades, dissolves, and the like.

All your life you've been seeing such transitions in movies and TV shows, and the use of them here will require only a little more thought than you probably gave them when you were an observer rather than a creator. As an example, from the Edit menu you might choose "clear to black," in which your background is cleared and replaced by a black screen—with your text intact.

Alternatively, you might dissolve both background and text—a process whereby everything slowly disappears—and dissolve to yet another image-and-text screen. Or wipe to a new screen, with the new screen coming from any of four directions, "wiping" away the current screen to show the new screen.

The possibilities are not endless, but they are mostly professional. What keeps them from being totally professional is a tendency for the departing screen to take on the palette of the incoming screen, which doesn't happen with video computers costing a million dollars. If you think of that was a drawback, bear in mind that three years ago you couldn't do these things on any personal computer.

Other features of *Video Titler* include a color palette, with adjustments to other palettes that may have been used to create an image, text palettes in which you specify the colors for pens 1, 2, and 3, and gradation palettes when you don't want to use a picture as background, but would like a nice, graduated color scheme. In addition, a timing option in VideoSeg allows selection of a fast or slow speed for the transition effects.

A data disk—which must be in drive DF1: while *Video Titler* is in use—con-

tains fonts, pictures, and a slideshow routine for viewing your separate screens as a continuous, timed show. Used in conjunction with *Videoscape 3-D* and the Aegis/Sparta ANIM program, it is even possible to mix animations into your slide show—though here I'm reading from the box a routine I've not tried.

As we've come to expect from Aegis, the documentation—this by John Skeel and Elizabeth Vanture—is clear, precise, and easy to understand. It is deep documentation, containing two manuals which together total over 150 pages, but you probably already know that nothing worthwhile ever comes easy. Fortunately, the skills of the writers make the reading easy and sometimes even pleasurable.

Two disk drives are required to run *Video Titler* and, while it will work in a 512K machine, you'll be limited to only the two lower resolution modes. The optimum memory, particularly if you wish to use the advanced features such as Genlock compatibility, is 1½ to 2 megabytes of RAM. Since the disks are copyable, you'll also want to consider using a hard disk both for the program and for the storing of elaborate scripts and screens. Obviously, you will also need a VCR, since that is the planned display media for the products of *Video Titler.*

The market for this program is the small-to-medium TV station (cable or broadcast) and the growing number of VCR and camcorder operators who've become disillusioned with their amateur standing (and with the limitations of built-in titlers) and wish to give their videos a more professional look and feel.

Aegis Development, Inc., 2210 Wilshire Blvd., Santa Monica, CA 90403 (phone: 213-392-9972). *—Ervin Bobo*

ANIMATION STAND
Hash Enterprises
Amiga with 1 megabyte
Disk; $49.95

No, the title of this program is not an oxymoron. *Animation Stand* doesn't mean "to go while staying put"; it refers to an animator's camera stand, usually consisting of a camera mounted with the lens pointed (down) at a table where illustrations, cartoons, etc. are placed for photographing. The camera is mounted so it can travel up or down, taking still photos that will be used to create a much-used form of animation.

Don't get excited—the package doesn't include a table and a video camera with mounting hardware. Instead it simulates a real camera stand at a very small fraction of the price. *Animation Stand,* in essence, is a disk-based camera stand with advanced functions. It makes it easy to produce professional quality pans, zooms, and distortions on IFF artwork.

Though it is completely self-contained, *Stand* is designed to work in conjunction with other Hash programs and the paint program of your choice. IFF files created in *Deluxe Paint, Digipaint, Express Paint, Photon Paint,* etc., can be loaded into *Stand* for manipulation.

The vignettes (animation sequences) produced in *Stand* are compatible with Hash's *Animation Effects* (flips, wipes, title scrolls, and fades), *Animation Flipper* (a way to preview animations), and *Animator Apprentice* (a desktop video 3-D organic animation program).

Requirements, Etc.

Stand requires a minimum of one megabyte of RAM, along with two floppy drives. Since it is not copy protected, use of a hard drive is possible. Considering the size of the files produced even with the pack routine, a hard drive is a great way to store lengthy animation sequences. Better yet, check out one of the removable media hard drives now available for the Amiga. Pop-in/out 10 meg cartridges will work wonders. (For those of us suffering from a "Reality Check," the shareware Read Quick and Write Quick routines are said to work nicely with *Stand,* packing 1.1 to 1.2 megs of data per floppy.)

You can throw almost anything at *Stand:* low res, medium res, high res; even interlace, overscan, and low or medium resolution HAM images. It will accept and manipulate all comers. Output is in the form of low resolution, overscanned, interlace graphics in up to 4096 colors. The packed frames are played back at various speeds, depending on the makeup of the images, from 6 to 30 frames per second. Owners of accelerator cards such as the 14 MHz Hurricane board will see even faster results, producing more realistic playback effects.

Little Book of Horrors

It's a good thing the program works as well as it does, and is offered at such an average Joe price. Otherwise the proofreader's nightmare passed off as a manual would be a real deterrent to my recommending this product. Realizing the shortcoming, Hash Enterprises promises a general cleanup, and addition of vital information.

The real troubles are twofold—typos and less than lucid explanations. We can forgive the manual's brevity as a result of the pricing, but the tie-in between vignettes and choreographies (the sequence of movements used to produce the vignettes) is as clear as swamp water.

The best way for the average computerist to differentiate between the two is to think of the choreography as a database format and the vignettes as the records in the database. As in a database, the format (choreography) is created and stored first (and can be kept separate as a template); the records (vignettes) are added later according to the format's structure.

The two page tutorial is a little hazy about the fine points; it loses its way if you're looking for step-by-step details of which menu option to activate and which key to press. A little reading between the lines takes care of the problem.

However, each function and menu option is explained in adequate detail. The prose won't win a Pulitzer, but it does get the job done.

Vidiot's Delight

Chuck Jones, eat your heart out! *Stand* is really two separate programs. One "Displays" the results, the other creates them.

Display lets you load a packed file for playback. (IFF images can be viewed in single frame mode only.) The (F)unction keys control playback speed, from 60 frames to 4 frames per second (contents of the animation and power of the CPU permitting).

The cursor keys are used as well. Up and down increase or decrease the playback speed by one frame; the left arrow plays the animation in reverse and the right arrow plays it in a nor-

mal sequence.

Mouseclicks stop the playback, permitting single frame step-throughs forward or reverse. Depressing the space bar reactivates the animation while the ESC key cancels the entire display process. It is here that video input can be passed through a genlock device while the animations provide foreground activity.

Stand

Stand just happens to be the name of the program that does the creating. Catchy, isn't it?

This program is the heart of the package. Despite its enormous power, there are really only a few menus and menu options to consider. Without listing every option or getting into the details of when to click the mouse or press a key, here are the basics for creating a vignette (animation sequence):

1. Create a "frames" disk,
2. Create a "data" disk,
3. Load an IFF image,
4. Position the cursor where desired,
5. Press the left mouse button,
6. Drag while pressing to expand the box which appears,
7. Release button,
8. Repeat 4 through 7 as desired,
9. Record the keyframes just produced with the mouse.
10. That's it!

It is possible to preview keyframes as they are produced. Keyframes may also be added, copied, deleted, or listed. The box used to create keyframes can be repositioned or otherwise modified (stretched, narrowed, etc.) to simulate zooms or pans.

To facilitate creating a vignette, *Stand* does 'tweening. That is, it automatically produces other frames between the keyframes designated with the mouse. This generation of "between" frames produces a smoother transition from keyframe to keyframe. Users may not only specify the number of 'tweens separating keyframes, but they can also view their approximate locations in real time.

The EASE command provides a limited amount of organic animation to the program. It controls the acceleration of keyframe movement. Inactivate the option to produce evenly spaced 'tweens; "ease them in" to space successive 'tweens further apart (between keyframes). EASE OUT does the opposite while EASE BOTH combines the latter two modes of operation.

Animations can be rendered in one of two ways: interpolation or pixelation. Interpolation smooths out edges, eliminating the "jaggies." Its inherent tendency to blur images also lends to the illusion of true animation. Pixelation takes an image and focuses in so closely that the individual pixels are clearly depicted. Both effects have their place.

Resolution impacts rendering time, as well as recording and playback. Vignettes in 100% resolution (full screen size) take longer to create and occupy more disk space. Other options include 75%, 50%, 25%, or a user-defined percentage.

The last major function is a real powerhouse. Toggling DISTORTION on gives users the ability to change the aspect ratio of the box which defines keyframes. The image inside the box distorts, not the box. With this you can make it seems like something is stretching or contracting, that someone or something is breathing, that Bugs Bunny is burrowing underground tunnels once more! You get the picture.

It's a Wrap

Well, this vignette (*Stand* review) is finished. I've run the package through my normal choreography (review procedure) and determined that *Stand* is a well-executed product at a near-impulse purchase price. I did not encounter any problems, bugs, or unexplainable difficulties working with the program. Despite the manual's shortcomings, I recommend *Animation Stand.*

Hash Enterprises, 2800 East Evergreen, Vancouver, WA 98661 (phone: 206-693-7443). *—Ted Salamone*

INTRO-CAD

Progressive Peripherals and Software
Amiga with 512K
Disk; $59.95

In spite of its name and the intent implied by that name, *Intro-CAD* emerges as something more than an entry

level Computer Aided Design program. To its credit, it uses an object-oriented drawing system and a full array of drawing tools, and includes printer devices that might well be envied by publishers of more costly CAD packages.

The heart of *Intro-CAD* is the object-oriented drawing system, meaning that each shape created, whether a circle, a square, or a straight line, will be seen as an object that is a separate piece of the total drawing.

When in use, these objects are like individual records in a database: a record may describe a circle and its location on the screen; another record may describe a line; still another, something else. These individual records can then be moved and manipulated while staying within the context of the drawing—which is analogous to resorting a file. Further, they can be saved as completed files or as individual parts, which can then be reloaded and used in other drawings.

The worth of such a system is in the fine-tuning of your drawing, for any program that calls itself a CAD system must be capable of allowing you to compose with great precision. This system allows you to draw a circle precisely to scale, and then to move it to a precise part of your drawing for firm placement.

The same system also allows for cloning of objects, a feature you'll find more than useful: If you're drawing the profile of tomorrow's automobile, it is extremely helpful to be able to make the wheels exactly the same size.

At this point it is worthwhile to state that *Intro-CAD* is not a 3-D CAD system. Those images we all have seen where an automobile design is rotated through three dimensions are not possible here. *Intro-CAD* is two-dimensional, but as the file of images on the disk shows, you can still use perspective to give your drawings the illusion of depth.

The tools you'll use to accomplish these things are selectable from pull-down menus, and include lines, boxes, circles, and arcs, as well as freehand drawing. There are adjustable text sizes for labeling your drawings, though only one font; and there are margin rulers and a grid that can be toggled on or off.

In using the grid, two variations on the standard grid are possible, the first option adding lines at 30 degrees from horizontal and the second adding lines at 60 degrees. In conjunction with the GridSnap tool, which causes your lines to snap to the nearest line of the grid, these options will add to diagonal lines the same precision of horizontal or vertical lines. As if that weren't enough, the mesh of the grid can also be made finer or coarser, within certain limits.

The Zoom feature of *Intro-CAD* is one of the most logical I've seen. Once selected, you stretch a "rubber band" square around the portion of the drawing you wish to magnify and, if necessary, repeat that step over and over until just one object (or a portion of one object) fills the screen. Perform whatever additions or deletions you had in mind and then, in only one step, return to the point where the full drawing is displayed.

Note this: Text added while in the zoom mode may shrink to almost nothing when you return to the full picture, and if you've never used a true CAD program before, you may be dismayed. However, everything you wrote is still there—remember our explanation of objects—and though it is unreadable now, it may be very legible on your plotted output, depending on the scale of the plot.

When outputting to a plotter, you must direct the file directly to the plotter, where a great deal of time may be consumed by the inherent sluggishness of such machines. It would be helpful to be able to send the information to a disk file for printing as a multitask, but such is not the case.

For standard printers, *Intro-CAD* includes drivers for a great many printers not usually found in Amiga devs libraries, among them the Canon PJ-1080, IBM Proprinter, and Colorprinter and more—over 40 drivers in all. This was done in an effort to fine-tune the program to the individual capabilities of various printers, rather than force you to choose an equivalent and settle for something almost right, and with one exception the effort deserves applause.

The exception I found was in trying to print in color on the Okimate 20 printer. For some reason, *Intro-CAD's* driver causes the color command to be interpreted as a black and white ribbon transport and the result is a rather strange, multicolored (but not true colored) mess. When a black ribbon is used and *Intro's* preferences are set to B&W, the result is much better and looks almost like plotter output.

On the Panasonic KP1092, results were equally good, although there are no Panasonic drivers. The Epson MX-80 III driver seems to work well in their stead.

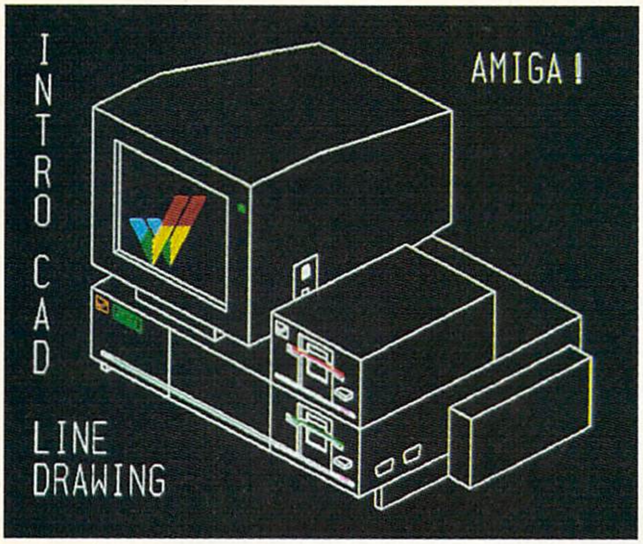
Almost. Vertical and horizontal lines are drawn extremely fine, as they can be drawn by plotters, but vertical lines and arcs still show that they are made up of vertical and horizontal steps. Still, the results are pleasing and are much better than a screen dump.

Other printer preferences advantages are these: being able to print either the entire drawing or only the part currently on screen; being able to print vertically or horizontally (here called "portrait" and "landscape"); and being able to select one of three print modes: Quick, Draft, and Final. You can also select printing for a 1:1 ratio, or elect to have your drawing rescale itself to fill the page.

With all this going for it, you'd expect *Intro-CAD* to have something wrong with it besides the Okimate driver—and it does. The program boots into Interlace mode and there is no way to change it to low resolution. Unless you happen to have one of the overpriced high-persistence monitors, you're going to have to put up with screen flicker. *Intro-CAD* uses a gray background to minimize the flicker, but it is still there.

Documentation is slight, only about 40 pages, yet it should teach you everything you need to know. There may even be a plus factor here in that the manual won't intimidate anyone. Yet it will walk you through a hands-on tutorial, at the end of which you'll have used most of the program features and be in a mood to experiment with the rest.

And now that you're sold on it, how will you use it? CAD isn't just for architects and engineers: it is for anyone who needs neat, clean, and precise drawings of just about anything, whether it be a drawing for a school report, a design for a company letterhead, flow charts, or the floor plan of your dream house. You can even design your dream house complete with dream furniture and then, until you build it,



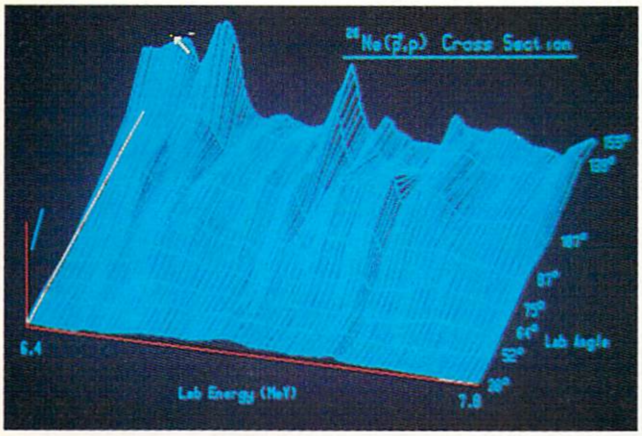
amuse yourself by rearranging furniture on the computer.

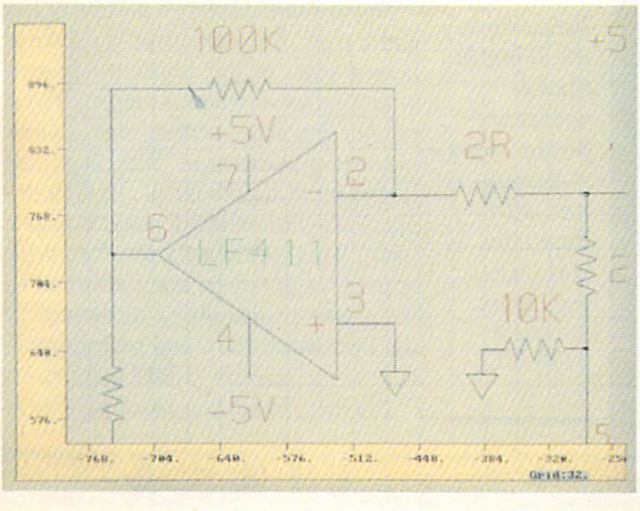
Whatever you have in mind, you can probably do it more precisely with *Intro-CAD.*

Progressive Peripherals and Software, Inc., 464 Kalamath Street, Denver, CO 80204 (phone: 303-825-4144).

—Ervin Bobo

Intro-CAD ***is only two-dimensional, but drawings can be given the illusion of depth.***
READER SERVICE NO. 194





FLOTSAM

We welcome your comments on any aspect of Amiga computing. Write to *Flotsam*, c/o *Ahoy!'s AmigaUser*, Ion International Inc., 45 West 34th Street—Suite 500, New York, NY 10001.

Congratulations on bringing out your premier issue of *Ahoy!'s AmigaUser.* If the first issue is any indication at all, this will be a great magazine. I look forward to each new issue and hope that it will not be long before you will be able to publish monthly.

I really like the format; good reviews, nice art gallery, colorful photos, and even a type-in Amiga BASIC program. I haven't typed the *AmigaUserTerm* program in yet—I'm still studying it as a programming example!

About the only suggestion that I have to offer is that you limit your focus to Amiga-specific articles. Some Amiga owners may resent having part of *AmigaUser* dedicated to C-64/C-128 info. They are fine computers, of course, but they also have their own magazines, and it seems a bit out of character to cover them in *AmigaUser.* Including them indicates that a better fitting name would be *Commodore-User.*

—Edward E. Brown II
Vancouver, WA 98686

I have just read your premier issue of *Ahoy!'s AmigaUser.* I was very impressed with it, except you should do away with the *C-64/C-128 Section* and devote the whole magazine to the Amiga machines. There will soon be a great number of Amiga users, and readers will want all the information they can get. You should go monthly as soon as possible. I own an Amiga 2000, and love it.

—Ronald Wix
New Castle, DE

Knowing that a large number of Amiga users still own and operate their 8-bit Commodores, the idea of a C-64/128 section seemed to make sense. Too bad nobody else thought so. We won't try it again. As for going from quarterly to monthly, we're halfway there!

Just writing to say GREAT JOB on *Ahoy!'s AmigaUser.* I've been an avid reader of *Ahoy!* Magazine for some time now, and have enjoyed it for all of that time. You're off to a good start, and I don't want to miss any of the articles, reviews, and programming information.

The Commodore 64 was, is, and will continue to be one of the most popular home computers. It never ceases to amaze me as to what it can be made to do. It provides a Great Entertainment Value, Economical Business Applications, and Unbelievable Educational Opportunities.

Technological advancements never stop. We are always looking for ways to do things better, faster, and easier. The Amiga is that small step towards a more powerful computer for home use. It is the next step in the normal evolution of the home computer. The Apple Macintosh was called

Continued on page 75

DESKTOP PUBLISHING—THE LATEST EDITIONS

By Ted Salamone

With three recent desktop publishing releases to cover, and only seven pages to do it, we knew we couldn't indulge in lengthy cross-comparisons. Instead, we've given you complete, uninterrupted reviews of *City Desk, Publisher Plus!*, and *Shakespeare*—allowing you to learn the strengths and weaknesses of each program on an individual basis—and saved our comparisons for the end.

The three programs mentioned here are all good products. None self-destruct or have any other anti-social tendencies. Also, the powerful shadow of Gold Disk's *Professional Page* falls over these reviews; so I suggest you catch its evaluation in the Premier issue of *Ahoy!'s AmigaUser.*

SHAKESPEARE
Infinity Software
Amiga with 512K
Disk; $225.00

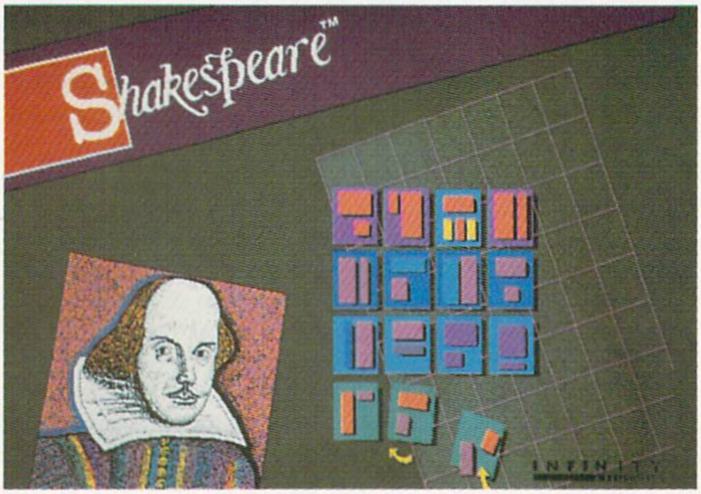
"All the world's a stage." Though it's true, don't quote me. Someone got to it before me, and it wasn't Francis Bacon. Just as Shakespeare aficionados know dear Bill wrote those classics, there'll be no confusion as to who developed *Shakespeare: The Page Integrator.* Infinity Software, you say. Yes, but everyone involved in the project is prominently mentioned in the manual—and they should be proud of their work. Just as Bill was proud of his performance in the Globe Theater, Londontown, England.

Enough ballyhoo. But actually, the program deserves to attract special attention. Here's why: it produces color output, can be used to create color separations, drives any *PostScript* device, and is simplicity come to life. It requires a mere 512K, comes with an extra disk full of clip art, fonts, and sample layouts, isn't copy protected, and handles digitized images.

IFF graphics can be cropped or resized at will; each retains its own color palette, adding to the flexibility of the 32 color display limit. Multicolor fonts are possible thanks to AmigaDOS 1.3; the enhanced print capabilities are also provided courtesy of the included Gamma 7 DOS 1.3 files.

"What You See Is What You Get" was never more true. *Shakespeare* really delivers in this area. Direct manipulation of attribute control (boldface, underline, italics, any combination thereof), and text and graphic resizing team up to provide ultimate control and fast response. Combined with the output capabilities, *Shakespeare* is hard to beat.

There's no limit to the size of a document; advanced users can manipulate the *PostScript* output through direct language control; and there are over 24 keyboard command equivalents.



Versatility's the thing in **Shakespeare,** *offering direct manipulation attribute control, resizing, more. READER SERVICE NO. 208*

Elan

There is a spirit, a special excitement about this program. It surprised me with its level of power, the number of features, and its grace under fire.

Resolutions range from 320 or 640 by 200 to 320 or 640 by 400, in a choice of 2, 4, 8, 16, or 32 colors. (Medium and high res are limited to 16 colors; HAM and overscan modes are not supported).

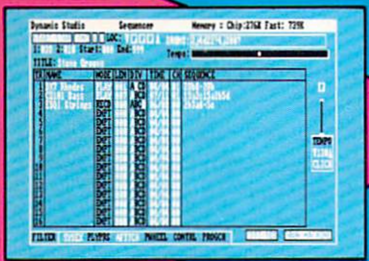
As usual, machines with more RAM will be capable of greater glories like the higher resolutions, greater number of colors, and larger documents. Multitasking is supported at any level.

Shakespeare displays a portion of the entire page. You maneuver via sliders, cursor keys, or the autoscroll feature which kicks in when a mouse-driven pointer contacts a screen edge. Rulers may be set in inches or picas. Page size is measured in like terms, though users also get to set the density (dots per inch). This is primarily for *PostScript* scaling, as dot matrix output is tied to the printer's capabilities (as defined in the Preference file), and more important, to the screen's 75 DPI maximum.

Another item to consider when print-

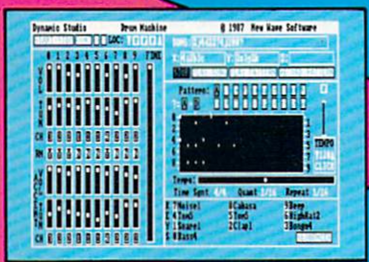
DYNAMIC STUDIO

Integrated Music Software for AMIGA computers



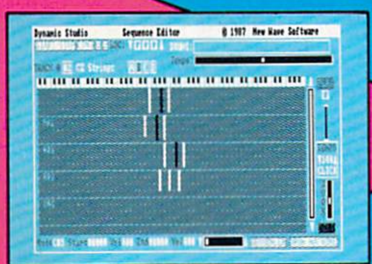
Sequencer

- 16 Tracks — 64 Individual Sequences
- ACCURATE timing 1/192 note resolution
- User definable time signature for each track
- Extensive Track Manipulation Functions
  - Quantize (3 methods)
  - Controller Scaling
  - Echo
  - Time Shift
  - Merge
  - Randomizing Functions
- Built-In System-Exclusive Librarian



Drum Machine

- Eliminates the need for costly external drum machine (uses the Amiga's internal sound channels)
- 200 digital drum samples included or use any IFF (one-shot format) standard file. All Amiga samplers support this standard
- Graphic Editing of Drum Patterns
- Adjustable tuning and volume ranges for each drum
- Velocity Sensitive (using external MIDI keyboard)



Event Editor

- Text Editing
  - Translates MIDI data into easy to understand statements
  - Modify, insert or delete any type of MIDI data
- Graphic Editing
  - Insert, delete and edit notes visually
  - Displays track in "Piano Roll" graph

AVAILABLE NOW! List Price **$199.95**

No Copy Protection
1 Megabyte Recommended

NEW WAVE
S O F T W A R E

P.O. Box 438, St. Clair Shores, Michigan 48080, (313) 771-4465

ing: you should set the resolution to high or low to ensure correct aspect ratio when graphic output is an issue.

To allow a full page view, a Display Window option is available. It loads a separate program which automatically depicts a complete representation of the document–a page at a time. The display can be resized to the viewer's satisfaction, pages flipped to and fro in similar fashion.

Once you start changing the foreground and background text colors or use the RGB sliders to alter frame colors, you'll feel as if a rainbow exploded all over your program. (From here it'll be a short hop to a physiological dependency on *The Calligrapher*, the 32 color font editor from InterActive Softworks that started this whole multicolor font affair).

IFF...Thenn, Elsee

Well, not really. It turns out that *Shakespeare* will take IFF graphics in any of the previously mentioned modes, but 320 by 200 and 640 by 400 work best. Also, save the graphics as brushes before importing them, to prevent the background from coming in and producing a large image which takes up inordinate amounts of memory and requires extensive cropping.

Then to printers. A *PostScript* file can be saved to a file for transmission to a service bureau–pretty routine stuff these days. The thermal transfer Colormaster (and Colormaster II) from CalComp are supported, as well as the Apple LaserWriter and Hewlett-Packard's amazing PaintJet color printer.

Despite these advances, this area of the program appears to have come from another planet. The instructions and setup routines are unlike anything else I've ever seen. It seems I wasn't the only one confused by the printer/printing arrangement. Technical Bulletin #1 addresses the very same issues. It clarifies a problem concerning printers which do not support a page width greater than eight inches. You see, *Shakespeare* defaults to 8.5. It also clarifies how, when, and why to use settings such as 1:1, 2:1, and Print to Fit (the option of last resort). Bulletins are sent to registered users automatically.

While the printer confusion proves that nothing is perfect, it also shows that Infinity is concerned about end users and provides prompt support. (Modem owners can dial into BIX for even better tech support.)

Elsewhere, the program's default settings can be edited. Info on changing startup resolution, the number of colors displayed, inches versus picas, and ruler and frame status (on or off) may be found on a Readme file on the program disk. This option, and several others, were added too late to make the manual.

Manual, Sweet Manual

Which brings me to one of my favorite topics. Except for its odd rectangular shape and lack of a separate quick reference card, this one is a textbook example of how to do everything right. The size can be overlooked because it does lay flat for easy reference; the card isn't needed, as it turns out.

A comprehensive index and a good Table of Contents support three tutorials, a chapter on *Shakespeare's* layout procedures, a tools/menus/requesters reference section, and a Hints & Tips chapter. There are even a few appendices (hard drive installation for example), a printer section (the weakest link), and an instructive chapter on creating good designs.

It is excellently and profusely illustrated, a delight to read and use.

Scripting, Printing

Shakespeare has online HELP–two pages of text which tell you where to go in the manual for help. Ouch! Get with it, guys; I know you want everyone to see how nice the manual is, but not everyone can read. That's why graphic interfaces were invented.

At a resolution of 640 by 400 the flicker is noticeable, and it doesn't appear to settle down much. Switching resolutions is a possible answer because the screen redraws so quickly (during all operations).

Just by clicking on more than one file you can designate batch loading from a disk. Once done, you select the desired file for use, and make one or more frames with the frame tool. The file appears when the frame is completed, automatically reflowing to fill new frames or to adjust to resized frames. Wow! (The manual warns users that nothing will display unless the frame is taller and wider than the font or graphic being loaded).

Another incredible feature concerns the built-in text editor. You're always in the right mode–no switching back and forth. Just click the pointer in a text frame and poke away at the keyboard, or select an edit menu option. It's so simple it's not even obvious at first.

Time's Up

Shakespeare is excellent. It's better than *Professional Page 1.0,* even with an X, Y coordinate display and snap-to grid control, among others. When you consider the price difference (*Shakespeare* is $170 less, suggested retail) there's no contest, minor feature deficiencies or not. (After using *Shakespeare* I know why Gold Disk plans to include their color separation program in *Pro Page 1.1,* along with dot matrix and PaintJet support. They heard about *Shakespeare).*

Infinity Software Inc., 1144 65th Street, Suite C, Emeryville, CA 94608 (phone: 415-420-1729).

PUBLISHER PLUS

Brown-Wagh/Northeast Software
Amiga with 512K
Disk; $199.95

Publisher Plus is an upgrade to the original *Publisher 1000;* do not confuse the two. *Plus* is positioned for the mid-level market, in head-to-head competition with *City Desk.* Due to its ease of learning and ease of use, *Publisher Plus* also works well as an entry level piece.

Version 2.00, the object of this review, is not copy protected, supports multitasking, and requires 512K RAM and DOS 1.2. It is billed as a "What You See Is What You Get" DTP with fast screen refresh capability and more than its share of flexibility. For the most part, every one of those statements is

correct. Remember, truth is often a matter of degrees, like shades of gray.

Screen resolution can be 640 by 200 or 640 by 400, as specified in the Preferences file. (*Plus*' multitasking aspect makes it easy to change resolutions by accessing Preferences from a Workbench window). While this is not as flexible as a menu option which toggles resolutions, it does not smack of inflexibility–it just bespeaks relativity, that little matter of degrees just mentioned.

On the flip side there are no limits to the number of columns per page, disk space is the only ceiling on the overall number of pages handled, and it allows leading down to 1/72nd of an inch! Microspacing (manual kerning) between letters goes as fine as 1/120th of an inch and a grid of X, Y coordinates makes these precise placements possible.

Add to that the ability to change units (inches, millimeters, and picas); the program's document orientation (as opposed to the more limiting page orientation); and the provision of style sheets (manual or automatic page formatting for consistent output). Movable rulers, resizable text blocks, IFF graphic cropping, and automatic text flow through block linking provide even more punch.

Despite all these features, and even more, *Publisher Plus* retains a clean look, feel, and mode of operation. You never get into convoluted command sequences or nested menus which call others and others still. Following the tutorial, average Amiga users can be productive in 45 minutes, give or take.

PS: Fonts & Imports Too

Plus shifts into flexibility overdrive when you take a look at its *PostScript (PS)* compatibility. Four *PS* fonts are provided, others can be used at will. Amigas linked directly to the proper laser printers or linotype machines will produce output ranging from 300 to 2540 dots per inch (dpi). Camera ready art, here we come!

If you don't own a laser, one command sends *PostScript* output to disk for transmission to a service bureau or a Sneaker-Net connection to the nearest print shop with the proper setup (Amiga, *Publisher Plus,* and a laser/linotype). Charges are usually reasonable, especially if you've previewed the output via dot matrix and you've edited accordingly.

A good number of standard Amiga fonts are also included on the disk, for dot matrix output. The quality of this output is quite acceptable on a 9 pin graphics matrix printer; it is excellent on a printer with letter or near letter quality output. All Preferences printers are supported.

You don't have to spend a lot of money snapping up fonts, or even buying a font editor; *Plus* automatically rescales fonts to point sizes not provided. For instance, the sample page produced in the tutorial requires 32 point text that is not provided. By indicating the desired size in the load requester, the program takes the nearest size of the desired font and creates the new

Now... at last!!! Electronic Page Processing comes to Amiga - PUBLISHER PLUS

When Gutenberg invented the first moveable type, a new series of words and descriptions were also invented to give printers a way of measuring the sizes of type and the widths allowed to fit it on a page. A few of these terms have come down through all the advances in printing technology and are still in use today. If you are not familiar with these terms, you might have trouble making Publisher do exactly what you want it to do. This section is a mini- course in publishing terms and how they are used. At the end of this section is an alphabetical listing which will explain them in specifics. Reading this section will show you how these terms are used in context.

The term Typestyle refers to a family of type. This includes all capital and lower case letters, all numbers, and all the assorted punctuation marks designed for use within the type family. In addition, most typestyles are broken down further into other sections by the weight or boldness of the letter. The typestyle that this book is printed in is named Century Schoolbook. The headlines are in Century



Old Time Publishers had to do it one letter at a time.

Schoolbook Bold and the text matter is in just plain Century Schoolbook.

Roman letters are straight, perpendicular to the baseline. Italics are slanted letters belonging to the same typestyle family. True italics are designed to be italics and are not to be confused with "obliques" which are simply electronically slanted roman letters. There are subtle differences between roman and italic letters beside the slant, most notably the lower case "a".

The size of a letter is measured in "points". There are 72 points to an inch. The text of this manual is set in 11 point. Point size is measured from the baseline of one line of type to the baseline of the next. Some typophiles dissagree with this but for our purposes, we'll go with this. Sometimes we like to put a little bit of extra space between the line and this is known as "leading out" (pronounced like pencil lead). We leaded this text out 2 extra points so we have our type set 11 on 13.

The width of a line of type is measured in "picas". There are 6 picas to an inch, hence a three inch wide line of type is correctly measured as 18 picas wide.

A block of type, known as a "galley", until recently was measured top to bottom in "agate lines". Today, most simply measure depth in inches.

Generally speaking, typestyles are either serif or san- serif. Century Schoolbook is a serif typeface in that it has little "tails" on the letters. Sans- serifs (without serifs) do not.

The typestyles available to you on Publisher are designed to be used on dot matrix printers and their names refer to their use within this framework.

Publisher Plus *pages can have any number of columns. Manual kerning can go as fine as 1/120". READER SERVICE NO. 223*

size on the fly! Sizes range from 2 to 120 points.

Basic text control includes attribute selection (bold, underline, italic, or combinations thereof), cut, copy, and paste functions, and alignment/justification (left, right, both, and centering). Text can be imported from the Notepad, *TextCraft, Scribble!*, or any other word processor which produces a straight ASCII file. Of course *Plus* has its own text editor, meant mostly for cleanup—not full-blown creativity.

Graphics

Publisher Plus is not a draw program. It does dither/reduce color IFF images to shades of gray (halftones), but its manipulation capabilities are strictly limited. Essentially you crop, resize, or reposition a graphic box (guide).

A separate program, Pattern Editor, is available from Workbench or CLI. With it you can create halftones or related patterns for backdrops and fills. There is no limit to the number of patterns which can be built, saved, and recalled. (*Photon Paint* should take a look at this.)

While this is mentioned in the graphics section, the patterns are mainly used to complement, highlight, or otherwise focus attention on text.

The Written Word

The 80 page manual, casual in its approach, is frequently illustrated with margin graphics which highlight the written word. The images are clear, concise, and informative.

The user's guide provides startup information, details menus and each option therein, includes a nice index, and then supplements it all with a glossary of printing terms. There's even a table of proofreader's marks for initials and pro alike.

The tutorial section steps through a good example of the program's prowess while maintaining a focus on simplicity. Instead of a strict reference section reserved just for definitions, *Plus* expands the premise a bit. The extra data actually fits in well because of the manual's conversational tone.

Start the Presses

Once the program is booted, a blank screen appears, begging to be filled. The only "sign of life" comes when moving the mouse—the X, Y coordinate display changes to reflect the mouse's position.

Importing text and graphics is a matter of selecting the proper menu option and designating the correct file in the load requester. (At this point I usually pull down all the menus, to check for keyboard alternatives. Sad to say, *Plus* does not support many. The few it has deal primarily with edit functions like cut, copy, and paste.)

To say the screen refresh (redraw) is fast is to understate the fact. Whether flowing/reflowing text or setting attributes (bold, underline, etc.), the screen snaps back to your control in record time.

The only exception (you knew there would be one) to the Speedy Gonzales routine happens when dealing with fonts that have been automatically scaled by the program. That's because the program must rescale them every time a change is made, which affects the position or related aspects (guide sizing, for instance) of the text.

This is not a crippling slowness, nor a major fault. It's simply amazing that *Plus* can rescale in the first place—especially as the font is loading from disk. Consider an example of the work being done: a 12 point font is selected for loading as 32 point. Every vector (line, curve, nuance) of that font (entire character set) must be examined and expanded proportionally through an algorithm which mathematically calculates an aesthetic output. All in the time it took me to compose and type this paragraph, probably less.

While the program does display as it prints, you only see a small portion of the page at any time during the composition process. To get the big picture you must select the full page preview option. A miniature representation of the page appears as a window over the main work area. Large graphics might be legible; headlines usually are, and the balance of the text is greeked. Having only one "magnification" preview mode is a bit restrictive.

Annoyances Plus

The font rescaling becomes unnerving if you don't pay attention to details. Bouncing back and forth from Type to "Drag " mode (edit versus reposition text guides) with a scaled font gets old fast. Some work does need to be done here; leaving Type mode should not cause the font to rescale.

Having the wrong printer set in Preferences does not guarantee an error message; on the other hand, the program doesn't crash when this occurs. Case in point: with a *PostScript* Preferences setting and the Amiga connected to an Epson compatible, nothing happened. No message, no output, no lockup, no crash and burn. (The file was set to transmit to the printer, not to a *PostScript* disk file. With the identical setup, *Professional Page 1.0* produces a steady stream of *PostScript* commands rather than of document text.)

Sometimes the resize gadgets get too close together, particularly when a graphic is being worked into previously flowed text. In such instances it is difficult to grab the correct gadget. A little finesse is required, or a quick click on the foreground/background menu option. If that doesn't produce the desired results, you can move either or both guides. Finally, you can combine both for the ultimate—it hasn't failed me yet.

Another annoying situation occurs when a guide is too small for the font. Again, no messages, no visual display, nothing. You can type all day and not figure out what is happening. I was setting up a headline but had made the guide too small (barely) for the font. Entering Type mode, I wailed away at the keyboard. All I got were cryptic flashes from the screen, and a lot of frustration. I thought my keyboard was on the fritz, I had gotten out of Type mode somehow, or I had never gotten into Type mode.

Not knowing what else to do, I played with the guide—smaller, longer, then higher. Magic! My text appeared. Sanity.

The Morning After

Like a good reporter you've spent all day writing copy. Putting on editor's bifocals, you've taught your reporter self a few lessons in brevity and style. Then it's off to prime the presses, Amiga style. After the entire process, and a successful product (newsletter, flyer, whatever), you have a good feel for *Publisher Plus.* Here's mine.

Plus has a clean look and feel, almost sterile at times. (It seems as if the menus are partially naked, perhaps attributable to the scarcity of keyboard equivalents.) It has a much more streamlined appearance than *City Desk*, both on the screen and in the manual.

For the most part it has speed to spare, and a nice selection of fonts are included on the disk. The ability to scale fonts, good looking ones at that, is remarkable. Any difficulties resulting from the font scaling can be mitigated somewhat by developing a discipline or work pattern, and staying with it. Position graphics, then flow text. Minimize the use of rescaled fonts.

You might even add commonly used fonts to your library. Since a good document should have no more than three typefaces per page (or issue, if small), you won't need to develop an extensive or expensive collection.

The lack of error messages troubles me. The potential for a real problem to go unnoticed (until it's too late) is cause for serious concern.

Plus provides a solid set of basic to midrange features, produces quality output, and generally behaves well. If only the error trapping/messaging were more developed, I would feel comfortable recommending the product. If you believe that "What you don't know can't hurt you," and are in the market for a midrange desktop publishing product, *Publisher Plus* is right for you.

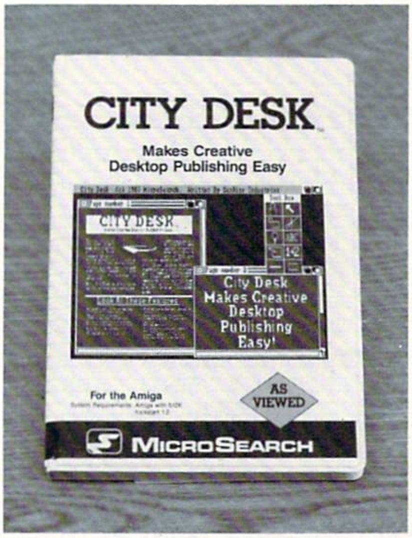
Brown-Wagh Publishing, 16795 Lark Avenue–Suite 210, Los Gatos, CA 95030 (phone: 800-451-0900 or 408-395-3838).

For more information on products advertised or pictured in *Ahoy!'s AmigaUser*, refer to the Reader Service Card bound between pages 50 and 51.

CITY DESK v. 1.1
MicroSearch, Inc.
Amiga with 512K
Disk; $199.95

Don't judge *City Desk* by its cover; the illustration on the package makes it look like an expensive tinker toy. That couldn't be further from the truth, because version 1.1 is extremely flexible and powerful. As desktop publishing programs go, it is also one of the easiest to learn and to use–on any micro.

At a minimum this update requires a 512K Amiga with a Preferences printer and a monochrome monitor. (Such a configuration allows compositions of



Complete, well-executed, easy to use.
READER SERVICE NO. 224

2 to 3 pages in length.) The recommended setup adds a color CRT and 2 megs of RAM; a hard drive and a *PostScript*-compatible laser printer can be added later. This high end configuration puts users in the big leagues, an arena *City Desk (CD)* fits into well.

The entire package consists of an unprotected program disk with sample work and clip art, a comprehensive, well-organized user's manual, a separate "fast start" card, and a few pages of information highlighting the differences between versions 1.0 and 1.1.

An optional clip art package *(Art Companion Volume 1)* is available for $29.95 list. It includes 200 medium resolution (640 x 400), IFF format images concerning people and technology.

The manual was produced with *City Desk*; as such it is a good indicator of the quality of work which can be achieved using the program. It also exhibits the confidence of the developer and publisher.

There is a well-rounded reference section which covers every icon tool and menu option in detail. The tutorial brings you through the basics in record time, and the appendices cover everything from command key alternatives and requester/gadget explanations to illustrations of the program disk's clip art and the symbol font table. A quick reference card summarizes commands and operations; however, it is bound in the manual. To maximize its usage the reference card should be freestanding.

For 512's Only

As noted earlier, there are some limitations with 512K machines, all memory-related. Depending on the mix of text and graphics, black versus white space, etc., modern day Guttenbergs can only produce documents of an extremely limited size.

The other RAM restriction involves printing. Since *City Desk* uses a temporary workfile to store the image being printed, and all images are printed as memory-intensive graphics, there isn't enough room to print while the program is running.

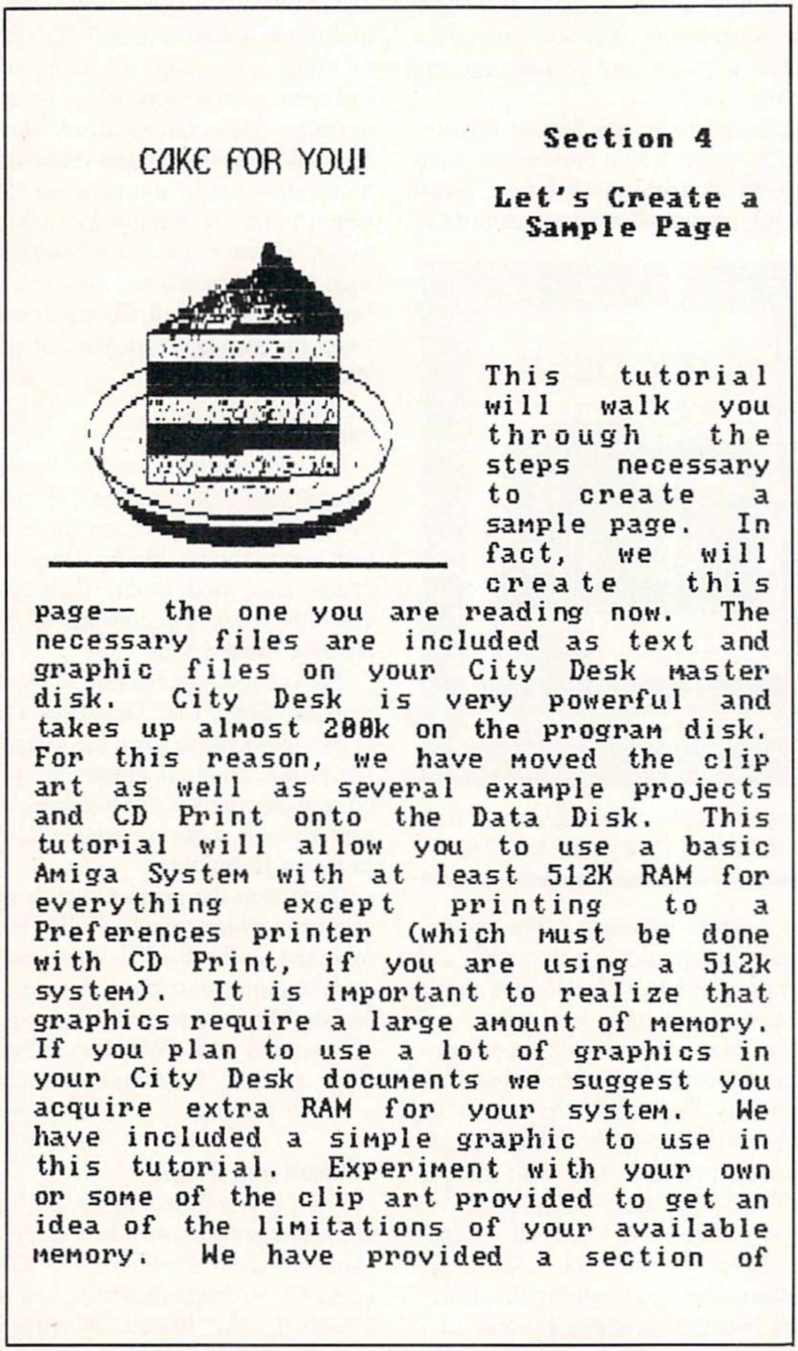
Don't stop the presses yet! A separate print program called *CD Print* is included on the disk. Using it you can print documents without running *CD* proper. The print routine uses the printer specified in the Workbench Preferences drawer. An elegant solution to a sticky problem.

Where's the Juice?

The juice is here and it's 220 volts! Besides having its own text entry mechanism (good for files up to 32K in size), *CD* supports files imported from *Scribble!, The Works!, WordPerfect,* and the Amiga Notepad. It has advanced graphic editing, cropping, and resizing tools, handles all IFF resolu-

tions/formats including brushes, converts color images to black and white, and is even capable of producing negative image graphics (swapping black for white).

Publishing pros (or novices) can autoflow text between blocks and pages without setting prior relationships (linking), flow text around graphics, set multiple fonts on the same line, control leading by points, picas, inches, millimeters, etc., and introduce typesetting-embedded commands in any document. *City Desk* supports 66 different commands from font selection and style changes (bold, italic, etc.) to spacing, margin definition, and various other output attributes.



CAKE FOR YOU!

Section 4

Let's Create a Sample Page

This tutorial will walk you through the steps necessary to create a sample page. In fact, we will create this page-- the one you are reading now. The necessary files are included as text and graphic files on your City Desk master disk. City Desk is very powerful and takes up almost 200k on the program disk. For this reason, we have moved the clip art as well as several example projects and CD Print onto the Data Disk. This tutorial will allow you to use a basic Amiga System with at least 512K RAM for everything except printing to a Preferences printer (which must be done with CD Print, if you are using a 512k system). It is important to realize that graphics require a large amount of memory. If you plan to use a lot of graphics in your City Desk documents we suggest you acquire extra RAM for your system. We have included a simple graphic to use in this tutorial. Experiment with your own or some of the clip art provided to get an idea of the limitations of your available memory. We have provided a section of

City Desk *permits you to flow text around graphics, set multiple fonts on the same line, and use typesetting commands. In all, 66 commands are supported.*

Automatic kerning, user-adjustable microjustification (distance allowed between letters and words), widow and orphan control, user-defined hyphenation, full justification support, and the ability to magnify any font on the fly are also included.

Up to 99 pages are possible per document, and there are six levels of screen magnification for detailed work and preprint layout reviews. An interlace mode is optional, multiple pages can be open and viewed simultaneously, and the screen grids are adjustable.

Printer support is a critical area, since the whole idea behind desktop publishing is to produce high quality output. Despite this apparent truth, other Amiga DTP programs aren't as well endowed as *City Desk.* Its printer support is second to none.

Support includes all Preferences printers, the Hewlett-Packard LaserJet + and Series II printers, the Okidata Laserline 6, and all *PostScript*-compatibles. The latter category includes the original Apple LaserWriter, LaserWriter Plus, and two of the units in their newest lineup. A multitude of third party manufacturers also support *PostScript* (or a clone language), so shop around for the best price/performance ratio. (Remember, *PostScript* printers produce the best output, and that's where the automatic kerning feature of *City Desk* comes into play).

For HP owners, *City Desk* also handles type F and type B font cartridges. Version 1.1 adds Amiga extended character support to the LaserJet +; that's more, output can now stream through the serial port. But, perhaps the best news of all for HP mavens is the fact that the printer no longer performs its internal reset—an activity that used to wipe out all temporary soft fonts and prevent manual paper feed. (Soft fonts are disk-based, stored in memory, as opposed to the cartridge fonts which plug into the HP series of machines.)

As an aside, the reset problem was not *City Desk's* fault. It is a problem which plagues HP printers regardless of the CPU they are connected to—I used to have the same problem with one connected to an IBM XT. It was

very frustrating and time consuming; that *CD* gets around the problem is testimony to the skill and dedication of its developers.

There are even more features, more than we can mention in the space allotted; so let's proceed to the hands-on evaluation.

The Proof Is In...

A simple icon toolbox resides on the right portion of the screen, separate from the page being created and the pulldown menus. There is a hand to move objects between pages, an arrow to move objects on the same page, a pair of scissors to crop graphics, a resizing tool, a magnifying lens for close-ups, a text entry tool, and a means of drawing lines. Other tools allow text or graphic editing, the creation of boxes, the ability to open new pages, and a copy feature which duplicates designated objects. The obligatory File 13 (trashcan) also makes an appearance.

Most of the icons are activated by the left *and* the right mouse buttons, providing two different though related functions. This duality is a nice feature, though it can be confusing at first. Just pay attention and there'll be no problems.

A single page document with one column and a graphic is composed in the tutorial; all its files are resident on the disk. Building it, therefore, is *merely* a matter of following directions and getting to know the layout flow, as well as how to use the tools, keys, and menus. Ever try to assemble a child's toy by reading the directions? Ever try to operate an IBM PC by reading the manual? If not impossible, some things are downright difficult to do when following written instructions. Usually, the more abstract and creative the task, such as designing and laying out a high quality document, the more difficult it is to accomplish via written words.

Well, score a big one for programmers and technical manual writers. The tutorial in *CD* went so fast, so smoothly, and was so correctly documented, I was done in under ten minutes. I kept looking for the missing instructions – yet there was my sample, chugging away on the printer.

The tutorial is indicative of how easy it is to learn and use *City Desk*. While it doesn't appear to be extremely intuitive, it is surprisingly simple to operate and understand, especially for a program packing this kind of power.

Advanced features will naturally require a little more time, as will heavy reliance on embedded commands or esoteric system configurations. The point, however, is that *City Desk* is a breeze to use. No nightmares or lost sleep from this one.

The Complaint Department

Nothing in this world is perfect, *City Desk* included. The complaints, however, are few, and for the most part minor.

The binding on the manual is too tight. A larger plastic spine is required for easy maneuverability. A separate quick reference card is needed, and a keyboard function key template would be nice.

These somewhat trivial matters aside, there is a real need for an UNDO option in the toolbox. For a program which combines a heavy focus on graphic alterations with basic drawing tools, there's no facility to let users play "what-if" with a document's object. Crop this, resize that, add or delete text here. Short of saving the document to disk before every change and reloading if the change isn't acceptable, there's no means to simulate variations. That is *City Desk's* biggest weakness.

Final Edition

If all programs were as complete and as well-executed as *City Desk*, you would never hear of a software company going out of business. It is amazingly powerful and easy to use, usually contradictory terms.

MicroSearch, Inc., 9896 S.W. Freeway, Houston, TX 77074 (phone: 713-988-2818).

DESKTOP PUBLISHING SUMMARY

Now for the skinny. On a performance basis the programs fall into two categories – high end and entry/midlevel. The high end includes *Shakespeare* and *Professional Page;* the other consists of *City Desk* and *Publisher Plus. City Desk* bests *Plus* in the midlevel category; *Shakespeare* cops top honors overall.

A comparison of suggested retail prices is less clear cut, for two reasons. First, the price structure does not correspond to the performance rating. Second, the imminent release of *Professional Page 1.1* must be considered. Its power has increased significantly; so has its list price (see mention in this month's *Scuttlebutt).*

Shakespeare is $225.00, *Publisher Plus* is $199.95, and *Professional Page 1.0* and *City Desk* are $149.95. *Professional Page 1.1* is set for release at $395.00. Chances are it will be out by the time you read this; that's why I've mentioned it so often.

Though list price is not a reliable evaluation benchmark, it must be examined to determine whether or not a program fits your budget.

Now on to a more relevant measurement: value. It takes list price and performance into consideration. I often refer to it as the "Bang for Your Buck" equation.

Shakespeare manages to squeeze by *Page 1.0* in this category. It more easily surpasses the others, particularly *Publisher Plus.*

Considering *Page 1.1, Shakespeare* widens the value gap. (The price increase on *Page* outweighs its performance increase.) *Shakespeare's* relationship to the others remains the same. (DTP mavens hooked on the need to have every bell and whistle will still opt for *Professional Page 1.1.* They'll just pay for their addiction.)

The results surprised me. I was certain *Professional Page* (1.0/1.1) couldn't be touched. I realized *Shakespeare* was the overall winner while composing the last paragraphs in its individual review. Congrats to Infinity Software – keep up the good work! ☐

AMIGA TOOLBOX

Continued from page 16

```
WEND
```

When you run this program, move the joystick around. This will let you draw all over the screen like a paint program. If you remove the quote mark in line five, the program will no longer paint but instead show you a line moving about the screen responding to your joystick.

The next program uses a combination of the various Amiga BASIC graphics commands to produce a little face that appears and disappears randomly throughout the screen. This routine can be used in a shooting gallery type arcade game.

—Michael R. Davila

```
CIRCLE(100,100),50,1 : PAINT(100,100),1
CIRCLE(80,90),10,2 : CIRCLE(120,90),10,2
PAINT(80,90),2 : PAINT(120,90),2
LINE(75,107)-(125,107),3
DIM gr%(800),bl%(800)
GET(50,75)-(150,125),gr%
GET(100,10)-(200,60),bl%
CLS : RANDOMIZE TIMER
WHILE(1=1)
x=INT(RND*450)+50 : y=INT(RND*100)
 FOR t = 1 TO 1000 : NEXT t
 PUT(x,y),gr%,PSET
  FOR t = 1 TO 1000 : NEXT t
 PUT(x,y),bl%,PSET
WEND
```

WORDWRAP.SUB

Wordwrap.sub is a subroutine that takes a string variable and prints it to the screen in a wordwrap format starting at a user-defined position and with a user-defined line width. The user need only enter the program via Amiga BASIC and save it to disk by clicking the mouse in the output window and typing "Save Mydisk:wordwrap.sub,A". Once saved in this format, the user can merge this subroutine into any other program by first loading the main program and typing "Merge Mydisk:wordwrap.sub" in the output window. The subroutine "wordwrap.sub" is now part of the main program and will be found at the end of your program list. This subroutine can then be easily moved anywhere within the main program using the cut and paste option available within Amiga BASIC.

—Philip R. Brauer
Mundelein, IL

```
'***This is a subroutine for wordwrapping text on the screen.
'** k$= text to be wordwrapped **
'** wd=width of text line desired. Must be => number
'       of characters in longest single word in string.
'** locy= location on y axis to begin printing text.
'** locx= location on x axis to begin printing text.

k1$="This is a sample output of a string variable and the ability "
k2$="to wordwrap with a set width of 50 characters and starting at "
k3$="at row 5 and column 5."
k$= k1$ + k2$ + k3$
wd=50:locy=5:locx=5
CALL wordwrap(k$,wd,locy,locx)
END

SUB wordwrap(k$,wd,locy,locx) STATIC
  x=wd:p=1:cb=0
  IF LEN(k$)<=x THEN PRINT k$:EXIT SUB
  wordsplit:
     IF MID$(k$,p+x,1)="" THEN
       LOCATE locy,locx
       PRINT MID$(k$,p,x)
       EXIT SUB
     END IF
     IF MID$(k$,p+x,1)=" " THEN
        LOCATE locy,locx
        PRINT MID$(k$,p,x)
        IF LEN(k$)>=p+x THEN
            locy=locy+1
            p=p+wd+1-cb
            cb=0:x=wd
            GOTO wordsplit
        END IF
     END IF
     x=x-1
     cb=cb+1
     GOTO wordsplit
END SUB
```


ERRATA

Please note the following inaccuracies in our May issue:

The price of *Professional Page* is $395, not $149.95. The latter price belongs to *PageSetter*, Gold Disk's entry level desktop publishing program.

Richard Herring's review of *The Accountant* should have been co-credited to Jeff Mandel.

See also the letter on page 75 by Anthony Wood of SunRize Industries regarding our review of *Perfect Sound.*

Software and Applications for the Small Businessman

By Ted Salamone

Welcome to the second installment of *Exec File*, the source for thumbnail product reviews, tips, and general information on business, utility, and graphic programs. Send your business and creative computing problems; I'll analyze those that have the broadest appeal and recommend software and hardware solutions. Tell me what you are doing with your Amigas, and, more important, what you would like to do. And don't forget to pass along tips and tales of woe. Forward all correspondence to Salamone & Associates, 42 Canterbury Road, Bridgeport, CT 06606.

THUMBNAIL REVIEWS

This issue we look at a clutch of business applications and a RAM expander.

For those who don't already know my thoughts on *WordPerfect,* here's a clue: I've followed it from the Apple IIe through its IBM PC incarnations onto the Amiga. I'm currently waiting for the ST version to arrive. Such loyalty can only be attributed to solid performance. What, then, would make me recommend another (Amiga) word processor?

Several things, actually: budgetary restrictions; unique, rare, or extremely well implemented features; and extreme ease of use, to name a few. These are some of the reasons behind my recommendation of *TextPro 1.01,* a $79.95 list price word processor from the folks at Abacus, 5370 Grand Street SE, Grand Rapids, MI 49508 (phone: 616-698-0330).

TextPro fits more budgets than *WordPerfect*, and a lot of other Amiga WP's for that matter. While it doesn't have all the bells and whistles of *WordPerfect, TextPro* still manages to provide a lot of bang for the buck. In this instance, low price does not equal low performance and shoddy merchandise; it equals a good value.

The basics are covered: pulldown menus, command key alternatives, onscreen formatting and text definition. It also handles IFF graphics, headers, and footers, and sports a good range of cursor control commands.

Where it really shines, however, is in the "special teams." Like the expensive programs, it allows the creation of macros (microcomputer automated commands, relative order), up to 30 per document disk.

In the user friendly category, options selected via pulldown menus are not checked off, as in other Amiga programs. Instead the active functions are noted on a message line below the menu bar. A glance tells you a document's condition, from line spacing and insert/overwrite status to the number of characters per inch and its mode.

Mode is another unusual (and beneficial) aspect. Documents can be created in letter mode (saved as ASCII text or in *TextPro* format) or C-source. The latter provides the special indentation and line formatting needed by a program written in C. Therefore, businessmen/artists turned hacker can use *TextPro* to create source code for use in a separate compiler.

When printing files, up to 30 separate documents can be identified to a named list for sequential, unattended output. The list of files can be stored, recalled, and manipulated at will. Actually, multiple lists, all named by the user, can be created and stored.

A separate, memory-resident program called BTSnap makes it possible to capture any graphic image from any program and insert it into a *TextPro* document. Text may be flowed around the image, or the image may be set apart for impact. Users decide if images are to be imported in raster form, black and white, or random (a black/white mottled effect).

Why, there's even a menu option to transmit data across the RS-232 port or to disk as a print! All these, and other features, are wrapped in a crisp, clean, ergonomic shell that makes *TextPro* a joy to use. If you're in the market for a medium duty WP with some unique features, *TextPro* is the ticket.

From the ondeck circle comes another crisp and clean Abacus product, *DataRetrieve* (v. 1.02). The less than glib name belies the program's ease of use and its icon-driven command structure. (In actuality, icons, pulldown menus, and a keyboard-driven command line are all available, allowing *DR* to accommodate every level of user.)

Almost the first thing one notices about this flat file (nonrelational) database is the generous ceiling on file size, record size, number of fields per record, and field size—a ceiling limited only by available disk and memory space.

Up to 8 databases can be open concurrently, and up to 80 indices can be created to view data in any way, shape, or form. Macros can be built, or online help accessed. The help is actually a *DR* database, and as such it is a great vehicle for demonstrating the program's graphic flourishes. Screen masks can be customized with numerous fonts, colors, and borders (circles, squares, etc.).

Screen masks. What are screen masks—costumes for bandit bytes? No. They're easy ways to control data entry and output. When you create a database there is a sequence of events to follow, all clearly outlined in the manual. When editing or printing records in that database, users can make a mask to limit access or output to specific fields in a record. (Think of masks as windows into a house. The contents of a particular room (record) can only be seen from a particular window (mask) .) In practice, however, multiple

masks (views, windows) can be created, named, and stored for later use.

Coupled with the program's two-level password security option, different users can be allowed access to different information on the same database–via a different mask for each user!

Searches and sorts are powerful and fast. Users specify the criteria, including the ability to work with subsets of a complete database for even faster processing. Search ranges, exact matches, and wildcards are supported; the sort precision can be set for each option.

Date, time, and mathematical field types are allowed in addition to the normal text format. Calculations, accurate to 15 digits, can be expressed with up to 34 operands and trigonometric functions. Building a formula is a simple task.

Tossing in its ability to display IFF graphics, *DataRetrieve* is a surprisingly complete and powerful database management system. Like *TextPro* it is not copy protected, and the manual is as comprehensive, fully illustrated, and well organized. *DR* also lists for $79.95, making it an excellent value as well. (For a second–first?–opinion on *DataRetrieve*, see the full-length review in the previous issue of *Ahoy!'s AmigaUser.)*

On the hardware side, we have been using Microbotics' StarBoard2 for some months now, and are glad to report it has been working perfectly. Despite a few inconsistencies, our initial impression of overall quality (metal case, tight connections) has proved to be true.

Our board has the multifunction module (clock, socket for MC68881 math chip) and the expansion daughterboard, making room for 2 megs of 256K chips. Room is provided for the recommended, but optional, parity chips.

Though well-built, there is evidence of design problems or engineering changes, and component limitations. These are in the form of several wire jumpers on the boards, the fact that only certain manufacturers' chips are covered by the warranty, and the board's inability to make use of the extra speed inherent in 120 nonosecond chips.

In actual use we have had no problem using non-recommended chips, and naturally did not waste money on the more expensive (120 ns) chips since the board only makes use of 150 nanosecond silicon. The jumpers (as expected) have produced no negative effects; they just indicate a quick fix to a less than optimal design, or a quick fix to a change in specifications.

We assembled and installed the components in about three hours, including the time needed to chip up bare boards to the maximum. The time would have been shorter if we had discarded the directions (out of date) and just followed the diagram.

Though inserting all the assembled boards into the metal case called for a bit of close work (a tight fit), snapping the unit into the Amiga's external expansion port was near effortless.

A disk of utility programs comes with the board, though none are needed for installation. StarBoard2 is produced by MicroBotics, 811 Alpha Drive–Suite 335, Richardson, TX 75081 (phone: 214-437-5330). They provide fast and courteous service.

TIPS 'N' TRICKS

As promised, here are general procedures anyone can follow to make sure BUG (business, utilities, and graphics) software fits their needs and budget. While most of the information can be gathered from a program's marketing information (the number of records accessible, how many cells it accommodates, etc.), there is no substitute for hands-on experience.

If at all possible, supplement these procedures with an in-store demo from a knowledgeable salesperson, use of the software at a friend's place, or, if legal where you live, rental software.

Rental software allows you the luxury of using the program (for a fee) in a relatively unhurried fashion, right in your home environment. Don't abuse the privilege by copying the software and the manual once it is in your possession, for that is the lowest form of theft.

Let's digress a moment. All situations can be handled, all tasks analyzed by answering some basic questions. Though they may not all apply in every instance (a rarity indeed), answers to WHO, WHAT, WHERE, WHEN, WHY, HOW, and HOW MUCH cover every conceivable iteration of existence, every action mankind is capable of making. Therefore, it is easy to see that they will also help us qualify software for a particular need or set of needs.

Now that I'm done sermonizing, let's explore how this relates to the art-cum-science of selecting software. WHO needs help choosing software? Anyone who's not omniscient, that's who. Judging from the number of computer magazines times the number of reviews in each times the num-

ber of people devouring those reviews as gospel...well, you get my drift.

Look at it another way—even reviewers need guidelines. The people you trust for the lowdown need a system, and here's mine. Of course, not all the information gathered in my qualifying process makes it to print. There's often too much, some of it turns out to be irrelevant, etc.

On the other hand, nothing is foolproof. These guidelines only help increase the degree of certainty that a program will do as advertised/do what you want it to do before you make the (possibly non-returnable) purchase. With those caveats in mind, we'll continue.

WHAT covers the topic to be analyzed. In this case, business programs such as *MaxiPlan, WordPerfect, DataRetrieve,* and *Superbase,* to name a few. Graphic and animation programs are another category, *Deluxe Video, Images, Draw Plus,* and *The Calligrapher* being prime examples. Lastly we are concerned with utilities such as *Zing!, FACC II,* and *Gizmoz.*

WHERE addresses the current Amiga marketplace and the conditions prevailing therein. WHEN covers your personal purchase timeframe. Do you want the package tomorrow or next month? The amount of time allotted to the evaluation has a direct bearing on the quality of the results. Scrimp, and the selection may as well have been made by a blindfolded chimpanzee!

WHY is simple. Do you want to waste hard-earned dollars? Better-informed consumers make better choices. Join the ranks and save money, time, and a lot of (potential) frustration. In the old days this was called weeping and gnashing of teeth—a state of frenzy easily achieved by someone who has just spent $100.00 or more on the wrong software package.

HOW? Use these guidelines and a dose of common sense, that's how. HOW MUCH is where the common sense and a little detective work come into play. Once the manufacturer's list price has been identified, check out the mail order prices in several magazines. If you feel that personal support may be required to make the software productive, contact two or three local Amiga dealers.

Go with the best price/value combination. Amigaphiles who know their stuff can make do with the lowest price. Others may want the warm and fuzzy feeling a (nearby) dealer provides. Naturally, this comfort factor will cost.

One last word of caution: make sure the mail order house is honest. If you haven't ordered from them before, check with the magazine to see if they have received any complaints. A call to the Better Business Bureau or Chamber of Commerce in their hometown is also a good source of information. If that is too much trouble or too expensive, check back issues of magazines to see how long they've been around. Six months or more is a good sign; though, once again, there are no guarantees.

Next issue we start delving into each section of the guidelines, beginning with task definitions and specifications. If you don't want to wait, or want the predesigned forms, send $9.95 in check or money order to Salamone & Associates at the address listed in the first paragraph. Mark SEC in the lower left corner of the envelope for immediate service.

Remember, we want your input. Ask questions, share experiences. This is *your* column. ☐

FLOTSAM

Continued from page 63

"the computer for the rest of us" due to its graphical interface. The graphical interface does indeed make the computer usable to many individuals who would not normally even touch one. Due, however, to Apple's marketing strategies, the ad should have read, "the computer for the rest of us who can afford it." Leave it to Commodore to be the one who truly provides "the rest of us" the amazing, affordable Amiga power.

One cannot worry about technological advancements. It's simply a waste of valuable time. We make choices according to our needs. As for me and my C-64, and my Amiga, we'll take the advancements as they come.

—Brent Scoles
Miami, OK

I have just finished reading the review of *Perfect Sound* and *Studio Magic* in the premier issue of *Ahoy!'s AmigaUser.* We of course always appreciate reviews. Morton Kevelson did a good job; however, I noticed several inaccuracies.

1. The Amiga 1000 *Perfect Sound* uses an ADC0804, not an ADC0802.

2. Morton comments that the 500/2000 *Perfect Sound* was hard to access and so be bought a cable. This is true if you own an Amiga 2000; however, the digitizer was designed for the Amiga 500 user, who accounts for most of our sales. Owners of the Amiga 500 will find that *Perfect Sound* fits snugly into the parallel port with easy access to the jacks and gain control.

3. Morton states "During the actual recording process the playback through the computer is turned off." This was true up to version 2.1; however, version 2.2 monitors the sound while recording.

4. Morton mentions that *Studio Magic* uses the manual protection scheme. All copy protection was removed in version 1.1, which is sent free to all registered owners.

5. Morton states that "When *Studio Magic* is started from the CLI, the size of buffers must be specified." The buffer size is optional. If none is given, *Studio Magic* will use all available memory. (This is what happened when Morton started *Studio Magic* from Workbench.)

As you know, reviews have a very significant impact on our sales. We therefore like to keep them as accurate as possible. Please consider printing these corrections.

—Anthony Wood
SunRize Industries
Bryan, TX

Congratulations and thank you for your new magazine, *Ahoy!'s AmigaUser.* I am an Amiga owner with obsessive tendencies toward the computer. Let's just say, I like it.

I feel I am uniquely qualified to critique your magazine because I love Amiga mags and have probably read 99% of them. I picked up a copy at Waldenbooks in Tyson's Corner Mall in McLean, VA. You will be glad to know that only a couple remain. I skimmed through it, noting the articles and reviews first before reading. I have to admit that

Continued on page 81

Continued from page 25

advanced extraterrestrial craft. You do this across more than 100 exciting screens that place the player in mortal combat with the wiliest menagerie of xenomorphic freaks imaginable. The marvelously detailed alien creatures constitute a regular bestiary of fantastic opponents. However, their consistent lack of animation is not worthy of their imaginative design. At times they appear to be little more than stick puppets marching around in preset patterns. And while the backgrounds in front of which they perform are beautifully drawn, they are static and frozen as well.

The control system is more difficult to operate skillfully than *Donkey Kong's* ever was. Your screen figure is maneuvered with the aid of a series of icons at screen bottom. It's hard to stop and start, the joystick's action is lethargic, and everything on the screen appears a bit wooden and jerky. Because the command system buffers your control selections, it is easy to run too far, shoot too many times, or lose control and jump to your death.

While it's logical to take advantage of the Amiga's icon capabilities, arcade action requires a different type of control. Pointing and clicking is just not suitable for split-second decisions. A half dozen alternatives come to mind, but perhaps Psygnosis felt that whatever worked for the successful *Barbarian* is good enough for this game.

Numerous signs of programming neglect are present. It is possible to remain at a point between screens and fire at aggressors without them firing back. Screen information is not updated when you leave the room and return, so you'll be passing the same obstacles and zapping the same aliens over and over, ad nauseum. There's nothing to prevent you from leaving a room and reentering several times to collect energy modules and other items that mysteriously materialize in infinite quantities.

Fans of *Barbarian* may find this game a must-have, but higher standards should be demanded for Amiga software. This one is more picture window than arcade game.

Psygnosis Ltd., First Floor, Port of Liverpool Building, Liverpool L3 1BY, United Kingdom (phone: 44 51 236 8818). *—Cleveland M. Blakemore*

BLOCKBUSTER

Mindscape
Amiga with 512K
Disks; $39.95

Wall-breaking games have been a favorite since Atari introduced *Breakout* in the late 1970s. Time and again, designers have returned to the idea of a paddle, a ball, and a bunch of bricks that need blasting.

The success of *Arkanoid* in the coin-op amusement centers has renewed interest in this type of arcade contest. Audiogenic Software Ltd. of Great Britain has now produced an interesting variation on the time-tested theme for the home market.

Blockbuster presents 80 challenging playfields, arranged in racks of 10, plus a construction module for creating new ones. A system of passwords allows proficient brick-bashers to start at the beginning of the highest-numbered rack he or she has completed successfully.

Each colorful screen has a different arrangement of bricks. The color determines the point value. A bell-like musical note sounds each time the player removes a brick.

Aliens of various types float around the playfield. They don't attack directly, but instead deflect the ball in unexpected ways.

The blocking objects may be annoying at times, but they prevent the endlessly repetitive ball paths which cause older wall-and-paddle games to fall into boring ruts. The aliens, which are worth 100 points each when hit, keep *Blockbuster* unpredictable game after game and blunt the effectiveness of "set" strategies for demolishing each wall. It makes *Blockbuster* harder to master, but it also boosts replayability.

All bricks are not created equal. Some explode after a single collision with the ball, but others require several hits. There are even indestructible white bricks which can't be removed at all. Invisible bricks and ones which fire paralysis bombs at the player's bat add further variety.

Some bricks, when shot, drop "U" shaped yellow tokens. After collecting them with the bat, the player can "spend" tokens for powerful weapons to make clearing the screen somewhat easier.

A bank of nine icons in the lower right corner represents the weapons and tracks the accumulation of tokens. Collecting a token moves the weapon selection outline one box higher in the icon bank. When the player presses the right mouse button, it activates the power which corresponds to the outlined icon. The power lasts as long as the current ball remains in play.

The weapons, some of which can be combined to produce even more amazing powers, run the gamut from slowing down the ball to guided missiles which can take out a whole row of bricks. Other possibilities include a larger bat, multi-balls, a laser, and a "smart bomb" which permanently removes all aliens from the playfield.

Knowing when to cash in tokens is the essence of *Blockbuster* strategy. For instance, those whose youthful reflexes are only a fond memory will probably want to make frequent use of the slow-down weapon.

The player uses the mouse or keyboard to control the left-right movement of a bat located at the bottom of the playfield. Pressing the left mouse button launches the ball and activates the current weapon, while the right button governs weapon selection. (Although the manual describes joystick control, a slip of paper in the carton admits that this feature is not actually implemented for the Amiga.)

Even Mindscape's customary carelessness cannot seriously undermine the irresistible appeal of *Blockbuster*. Experienced gamers may snicker at the amateurish title screen and the lack of a non-volatile vanity board, but the game itself is pure gold. *Blockbuster* may well be the best arcade-style action game available for the Amiga today.

Mindscape, 3444 Dundee Rd., Northbrook, IL 60062 (phone: 312-480-7667). *—Arnie Katz*

Understanding and Using the Command Line Interface

Behind ASSIGN

By Richard Herring

AmigaDOS deals with devices. We're all familiar with some of these—disk drives, monitors, printers, modems. These are the physical devices in our computer systems. But AmigaDOS is not limited to physical devices. It can also recognize logical devices that, to the user, don't really exist, but to the computer are as real as anything else.

This ability to deal with logical devices is particularly handy in two situations common to many of us. It can provide a shorthand for dealing with long file names or files buried in nested subdirectories. It can also allow users with single floppy drives to avoid switching back and forth between the Workbench disk and a program disk.

So, how do we get control of logical devices if they are so useful? Just use the simple AmigaDOS command ASSIGN. You can find it in the c directory of your Workbench disk. This issue, we'll look at ASSIGN in detail and then end with a couple of hints from Kirk Hans in Wyoming.

The simplest thing you can do with ASSIGN is just type it and see what happens. On a typical one drive system with a Workbench 1.2 disk inserted, you'll get:

```
ASSIGN
Volumes:
RAM Disk [Mounted]
Workbench 1.2 [Mounted]

Directories:
S         Volume Workbench 1.2:s
L         Volume Workbench 1.2:1
C         Volume Workbench 1.2:c
FONTS     Volume Workbench 1.2:fonts
DEVS      Volume Workbench 1.2:devs
LIBS      Volume Workbench 1.2:libs
SYS       Volume Workbench 1.2:

Devices:
DF0 PRT PAR SER RAW
CON RAM
```

That's a lot of data, but until we figure out what it means, it's really not information. First, we see that a RAM disk is available and that a diskette with the volume name "Workbench 1.2" is inserted in a disk drive. Then we see a listing of the seven directories that hold files that AmigaDOS needs access to now and then. For each of those seven, we see the disk name (Workbench 1.2) and directory (s, fonts, etc.) that will actually be searched by DOS as it looks for files. Finally, we see the devices that DOS thinks are available, including one drive, a printer, a parallel port, a serial port, an unfiltered console window (RAW), the standard console window, and a RAM disk.

The seven directories (in capital letters) are logical device names. For the moment these logical device names match the actual directory names on the disk—these are the default values. The real benefit here is that we can tell DOS where to look for files that it expects to find in these logical devices.

Let's say you have booted your computer with a regular Workbench disk. Now, you remove that disk and insert one on which you're doing some programming or just playing with hints and tricks from magazines. This second disk is labeled "Work". On this Work disk is a c directory with many of the common AmigaDOS commands, like DIR, LIST, PROMPT, and ASSIGN. You type assign, and what do you get?

```
"Please insert volume Workbench 1.2 in any drive"
```

ASSIGN is loaded from Workbench. And then you see the following message:

```
"Please insert volume Work in any drive"
```

DOS could not find ASSIGN on your Work disk even though it was there. DOS first looked in the current directory of Work, and, not finding ASSIGN, it next tried the default location—Workbench 1.2:c/ASSIGN. So it had to ask for the Workbench disk back.

You're Probably Wondering....

1) *Just what is in those seven directories where DOS looks for its files?* S: houses batch files (or command sequence files). These files are used by the EXECUTE command. L: contains AmigaDOS library functions. C: is the command directory. It holds many of the commands that users issue from the CLI prompt.

FONTS: is the directory where the various Amiga text fonts are stored. DEVS: holds preference settings, as well as handlers and drivers for different devices from the serial port to the speech synthesizer, from the printer device to the clipboard. LIBS: is where DOS finds the system library files used as operating system extensions. These include the transcendental math functions and the text-to-speech translator.

SYS: refers to the root directory of the boot (Workbench) disk. It also gives you a shorthand way to refer to the boot disk. Instead of typing "Workbench" as part of a command line, you could substitute "SYS:" to refer to the Workbench (boot) disk.

2) *What happens to my ASSIGNments if I open several CLI windows?* Nothing happens. Every CLI will recognize the same ASSIGNments regardless of whether they were made in that window or another one.

3) *ASSIGN can change logical devices. Can I also use it to change the names of physical devices?* Nope.

4) *Are ASSIGNments saved? What happens when I turn off my computer?* ASSIGN makes its changes only for the current session. When you reboot, any ASSIGNments you made before will be gone. One way around this is to put the ASSIGN command in your startup-sequence file.

5) *Can I play dirty tricks with ASSIGN?* Sure, you can remove an ASSIGNMENT. If you type: "ASSIGN C:", AmigaDOS will be able to look for command fields only in the current directory. It won't bother to look for them in the c directory.

6) *When I type "ASSIGN" or "ASSIGN LIST" to see a new assignment that includes nested subdirectories, I don't see the whole path. Why?* You must not be using version 1.2. In some older versions, ASSIGN LIST only showed the lowest level (most deeply nested) directory in the path. If you type:

```
ASSIGN deep: Work:MODULA/workfiles/games/beta
```

and then do an ASSIGN LIST, you'll see:

```
DEEP Volume: Work Dir: beta
```

But with version 1.2, you should see:

```
deep        Work:MODULA/Workfiles/games/beta
```

7) *What if one of the seven directories is not on the disk I boot with?* Then, ASSIGN will have no default for that directory. DOS will be able to look for files that are normally in that directory only in the currently logged directory.

To avoid shuffling disks back and forth like this, try using ASSIGN to actually reset the default:

```
ASSIGN c: Work:c
```

You will need to do this while the Workbench disk is inserted because, until this command is executed, DOS still won't find ASSIGN on the Work disk.

Once you have made that ASSIGNment, insert your Work disk and try any DOS command that is on it. Do a DIRectory, a LIST, or an ASSIGN. Each command will run from the c directory or your work disk. You are no longer plagued by:

```
"Please insert volume Workbench 1.2 in any drive"
```

Try typing ASSIGN again and you'll see that the first line under "Directories:" has changed to:

```
c          Work:c
```

(For all this to work properly, you need to use the volume label on *your* work disk–Work is the name of *my* disk. And your work disk must have a c directory into which you have copied various DOS commands from the Workbench c directory.)

ASSIGNing the c directory like this may be the most common use of the ASSIGN command. You may also find it valuable to ASSIGN the DEVS directory when you are working with programs that send output to a parallel device (typically a printer) or to a serial device (a modem or printer).

ASSIGN is also a dandy tool for abbreviating long program names and paths. Let's say you are cleaning up a bunch of disks, deleting and moving files. Typing DELETE over and over can get old fast. Try ASSIGNing a shorter command to DELETE. You could just call it "d:".

```
ASSIGN d: sys:c/DELETE
```

Now all you have to type is "d: filename   ". DOS will interpret "d:" as the DELETE command in the c directory of the boot disk (SYS). If you omit "sys:" DOS will look for DELETE in the c directory that lists when you type ASSIGN.

Unfortunately, when you use ASSIGN to abbreviate commands like this, the abbreviation (logical device) you create can only be paired with the command. Options for that command will not work. If you want to use the "ALL" option with DELETE, you won't be able to type:

```
ASSIGN d sys:c/DELETE ALL
```

The ALL option simply won't take–you will just get a "Bad args" response from your Amiga.

Other than that limitation, ASSIGNing short command names is valuable. When I first got an Amiga, I renamed a number of commands, both to make them shorter and to make them conform to similar commands in CP/M and MS-DOS. The problem with that approach was that every

program I didn't write myself that needed a DOS command was unable to find my renamed version.

You can save even more keystrokes by ASSIGNing long path names to logical devices. Say you are programming in Modula 2 and you have a disk with the volume name "Modula." A directory on Modula is called "workfiles." A subdirectory in workfiles is "demos." And a subdirectory in demos is "documentation."

Now when you want to see the documentation for your new demo, AweSome, you will have to type:

```
TYPE Work:Modula/workfiles/demos/documentation/AweSome.docs
```

This will not encourage you to use subdirectories, which are actually good tools to keep disks organized.

Instead, try making the following ASSIGNment:

```
ASSIGN docs: Work:Modula/Workfiles/demos/documentation
```

and you can see your documentation by just typing

```
TYPE docs:AweSome.docs
```

We'll end with a couple of hints from Kirk Hans in Sheridan, Wyoming. Kirk writes:

"I have used the Amiga for about four months now and, not being able to afford another disk drive, I have tried to use the CLI extensively for most of my work. Using only one drive, I had to put some kind of C: directory in RAM:. After going through the frustration of deleting my RAM:C directory before reassigning to another disk, I came across a little line that has saved me many times:

```
1    df0:c/assign c: df0:c
```

"Even with no command directory in RAM: this line uses the disk in DF0: for its commands and reassigns C: to this disk.

"This also works if you don't have a certain command in your RAM:C directory. Let's say you needed to delete a file and did not have DELETE in RAM:. You would type:

```
1    df0:c/delete    filename
```

or "execute" a batchfile:

```
1    df0:c/execute    batchfile
```

"I usually try to keep a skeleton C: directory on most of my disks just for this purpose, so there isn't so much disk swapping and file command copying to RAM:."

So, we have seen how to use ASSIGN to tell DOS where you want it to look for stuff that was originally located somewhere else, or what you want it to call stuff that was originally called something else.

Got a hint you'd like to share? Send it to P.O. Box 1544, Tallahassee, FL 32302. You may see your name in print and get a free public domain disk to boot. ☐

SPEECH SET

Continued from page 30

```
COLOR 2,1:PRINT TAB(22)"ON
LINE (254,118)-STEP(122,10),3,b:PAINT STEP(1,1),1,3
LOCATE 16,38:PRINT "NORMAL
LINE (118,134)-STEP(122,10),3,b:PAINT STEP(1,1),1,3
COLOR 2,1:LOCATE 18,20:PRINT"REPEAT"
LINE (254,134)-STEP(122,10),3,b:PAINT STEP(1,1),1,3
LOCATE 18,34:PRINT"CHANGE STRING"
LINE (118,150)-STEP(122,10),3,b:PAINT STEP(1,1),1,3
LOCATE 20,20:PRINT"RESTORE"
LINE (254,150)-STEP(122,10),3,b:PAINT STEP(1,1),1,3
LOCATE 20,39:PRINT"QUIT":COLOR 2,0
LOCATE 22,2:PRINT"STRING";
LINE (118,166)-STEP(480,10),3,b:PAINT STEP(1,1),1,3
COLOR 2,1:PRINT TAB(16)" Coffee":COLOR 2,0

Main:
SAY a,s:COLOR 2,1
WHILE MOUSE(0)>-1:WEND
IF MOUSE(1)<(88) GOTO Main
j=INT((MOUSE(2)+14)/16):k=MOUSE(1)-250
ON j GOSUB Inflection,Voice,Pitch,Rate,Tuning,Volume,Channel
IF k<=0 THEN ON j-7 GOSUB Synch,Repeat,Restored
IF k>0 THEN ON j-7 GOSUB SynchCtrl,Change,Quit
GOSUB Change

Inflection:
LOCATE 2,19
IF s(1)=0 THEN s(1)=1:PRINT"MONOTONE" ELSE s(1)=0:PRINT"EMPHATIC
LOCATE 2,55:PRINT USING "#";s(1):FOR g=1 TO 800:NEXT:RETURN Main

Voice:
LOCATE 4,20
IF s(3)=0 THEN s(3)=1:PRINT"FEMALE" ELSE s(3)=0:PRINT" MALE "
LOCATE 2,61:PRINT USING "#";s(3):FOR g=1 TO 800:NEXT:RETURN Main

Pitch:
PUT (place(1),40),blank,PSET
x=MOUSE(1):IF x>edge(1) THEN x=edge(1)
IF x<120 THEN x=120
PUT (x,40),pointer,PSET
s(0)=x-55:LOCATE 2,51:PRINT USING"###";s(0)
place(1)=x:RETURN Main

Rate:
PUT (place(2),56),blank,PSET
x=MOUSE(1):IF x>edge(2) THEN x=edge(2)
IF x<120 THEN x=120
PUT (x,56),pointer,PSET
s(2)=x-80:LOCATE 2,57:PRINT USING"###";s(2)
place(2)=x:RETURN Main

Tuning:
PUT (place(3),72),blank,PSET
x=MOUSE(1):IF x>edge(3) THEN x=edge(3)
IF x<120 THEN x=120
PUT (x,72),pointer,PSET
s(4)=(x-120)*50+5000:LOCATE 2,63:PRINT USING"#####";s(4)
place(3)=x:RETURN Main

Volume:
PUT (place(4),88),blank,PSET
x=MOUSE(1):IF x>edge(4) THEN x=edge(4)
IF x<120 THEN x=120
PUT (x,88),pointer,PSET
s(5)=(x-120)/4:LOCATE 2,69:PRINT USING"##";s(5)
place(4)=x:RETURN Main

Channel:
IF MOUSE(1)<118 OR MOUSE(1)>500 THEN RETURN Main
IF MOUSE(1)<250 THEN
  IF ltch THEN ltch=0 ELSE ltch=1
  COLOR 2+(ltch>0),1-(ltch>0)
  LOCATE 14,16:PRINT "     LEFT      "
ELSE
  IF rtch THEN rtch=0 ELSE rtch=1
  COLOR 2+(rtch>0),1-(rtch>0)
  LOCATE 14,33:PRINT "     RIGHT      "
END IF
IF ltch THEN s(6)=8
IF rtch THEN s(6)=9
IF ltch AND rtch THEN s(6)=10
IF ltch=0 AND rtch=0 THEN s(6)=11
COLOR 2,1:LOCATE 2,72:PRINT USING"##";s(6)
RETURN Main

Synch:
LOCATE 16,22
IF s(7)=0 THEN s(7)=1:PRINT"OFF" ELSE s(7)=0:PRINT"ON "
LOCATE 2,75
PRINT USING "#";s(7):FOR g=1 TO 2000:NEXT:RETURN Main

SynchCtrl:
LOCATE 16,37:s(8)=s(8)+1:IF s(8)=3 THEN s(8)=0
PRINT ctrl(s(8)):LOCATE 2,77:PRINT USING "#";s(8)
FOR g=1 TO 800:NEXT:RETURN Main

Repeat:
RETURN Main

Change:
LOCATE 22,16:COLOR 2,1:PRINT SPACE$(LEN(a))
LOCATE 22,16:LINE INPUT " ";a:a=TRANSLATE$(a)
RETURN Main

Restored:
COLOR 2,1:LOCATE 2,51:PRINT "110,0,150,0,22200,64,10,0,0
IF s(1)=1 THEN
  LOCATE 2,19:PRINT"EMPHATIC"
END IF
IF s(3)=1 THEN
  LOCATE 4,20:PRINT " MALE "
END IF
IF s(1)<>110 THEN
  PUT (place(1),40),blank,PSET
  place(1)=165:PUT (place(1),40),pointer,PSET
END IF
IF s(2)<>150 THEN
  PUT (place(2),56),blank,PSET
  place(2)=230:PUT (place(2),56),pointer,PSET
END IF
IF s(4)<>22200 THEN
  PUT (place(3),72),blank,PSET
  place(3)=464:PUT (place(3),72),pointer,PSET
  END IF
IF s(5)<>64 THEN
  PUT (place(4),88),blank,PSET
  place(4)=376:PUT (place(4),88),pointer,PSET
END IF
IF s(6)<>10 THEN
  ltch=1:rtch=1:COLOR 1,2:LOCATE 14,16
  PRINT "     LEFT      ";TAB(33)"     RIGHT      ":COLOR 2,1
END IF
IF s(7)=1 THEN

  s(7)=0:LOCATE 16,22:PRINT"ON "
END IF
IF s(8)<>1 THEN
  s(8)=0:LOCATE 16,37:PRINT" NORMAL "
END IF
LOCATE 22,17:COLOR 2,1:PRINT SPACE$(LEN(a))
LOCATE 22,17:PRINT "Coffee"::a=TRANSLATE$("Coffee")
RESTORE:FOR i=0 TO 8:READ s(i):NEXT:RETURN Main

Quit:
SCREEN CLOSE 1:END

DATA 110,0,150,0,22200,64,10,0,0
DATA " NORMAL "," STOP ",OVERRIDE
DATA PITCH,165,375,RATE,230,480,TUNING,464,580,VOLUME,376,376
```

Caution! Read your Amiga BASIC manual and familiarize yourself with your computer's screen editor before entering the above program—or don't come crying to us!

While we won't teach Amiga BASIC over the phone, we will assist readers who have done the necessary background work and encounter problems entering *Speech Set.* Call 212-239-6089 (if busy or no answer after three rings, 212-239-0855) weekdays between 8:30 and 4:30, EST.

Continued from page 75

at first I was overcome by a wave of mediocrity. It was all obviously professionally done, but for some reason I felt it was all stilted and manufactured. However, I had a more positive opinion the second time.

The first thing I noticed was all the familiar Amiga ads. They made me feel very much at home. Then I noticed that the structure was similar to *Ahoy!* It was nice to see it all filled with Amiga stuff. One of the best things about the news section was its timeliness. As many other mags as I read, the Amiga 500 Command Cabinet, *Ports of Call,* and *Music Studio 2.0* were all first-time announcements.

The *Matrix Pattern* article was good, once I figured out what the program did. *Flotsam* was thoughtful and had a nice perspective. *Eye on CLI,* while not original, contained information worthy of repeating. *The Essential Amiga Entertainment Library* was enjoyable except for one thing: you used C-64 pictures instead of Amiga for several of the games.

Again, the reviews were very current. Yours are the first I've read of *King of Chicago* and *Shadowgate.* I especially enjoyed your review of *Alien Fires.* I remember the hype surrounding that game in another magazine. When I saw a demo at my local store, I couldn't believe it. What a piece of nothing. I would also like to single out the Micron review simply because it was thorough and informative. Good job.

The sound article was probably the best thing in the issue. I will have to forgive you for not mentioning my music, for I did the demos that came with the *Synthia* Extras disk.

I look forward to your next issue. —Don Lewis
Alexandria, VA

Morton Kevelson planned to mention the Synthia *demos, which are in fact of excellent quality, but ran out of space. Regarding the C-64 screen shots, those were the ones the manufacturers sent us when we requested Amiga visuals. We noticed that they looked suspiciously similar to the C-64 versions, but figured that the companies in question must know their own software better than anyone. Not better than our software-savvy readership, though—for several of you wrote in to apprise us of our mistake. Thanks also to Glen Pittman (Angola, NY), Tracy Blumenthal (Lakeland, FL), and Paul Stern (Minot, ND).*

I purchased an Amiga 1000 a couple of years ago, and recently upgraded to an Amiga 2000 with all the available options. I'm very excited about the A2000.

I've seen the recent articles in various magazines about the two C-64 emulators and how they stack up to the real thing: a genuine C-64. There have been some rumors about Commodore quietly discontinuing the C-64, but on the other hand, I've heard that Commodore is still exploring software/hardware possibilities for the C-64 and has decided to continue full production.

I still have my old C-64, as well as $$$thousands in software. I hope Commodore does continue research and production for this great machine.

I have no opinion about either C-64 emulator currently being offered by third party companies, but I've found out enough about the C-64 to know that you can't easily emulate this machine, in software, with 100% compatibility.

This idea is really worth passing around: There are millions of C-64's out there. Most people won't buy a new computer because of the $$$thousands they've invested in C-64 software and add-ons. So how about a C-64 board for the Amiga series of computers? The Amiga may be the greatest computer around, but let's be practical. Look at all that software out there for the C-64—most of which will never find its way into the Amiga owner's home. There may be a very bright spot for the C-64 *and* the Amiga if Commodore can come up with a C-64 board that is 100% compatible with the C-64.

With so many C-64 owners out there, Commodore is promised a wealth of sales in both Amiga and C-64 boards. It would be really neat to see some positive reader response to this issue. Come on, brother Amiga owners! If your first love in computers was a C-64, keep the 64 alive. Let's push for a C-64 board! —Stephen E. Franklin
Bossier City, LA

We're sure that Commodore could sell more than a few 64 and/or 128 boards to Amiga owners. Regarding software emulation, ReadySoft claims that their 64 Emulator 2 *is an improvement over the first release (see* Scuttlebutt, *page 9).*

And now, another worthy cause for Amiga users to rally around...

At the recent NCGA show I had the opportunity to express to Commodore's Amiga Products Manager, Paul Higginbottom, my concern about the future of the Amiga 1000. Specifically, I am worried about the much talked about increase in chip RAM to 1 Mbyte or more in the A500 and A2000. I foresee software which will require this and that would not operate on the A1000 or would have limited functions. It was for this reason that I requested to Mr. Higginbottom that Commodore attempt to make an upgraded motherboard for the A1000 that would allow us to have the expanded capabilities of the other machines, yet allow us to use the peripherals, like internal RAM expansions, in which we have invested these past two and a half years.

Unfortunately, Mr. Higginbottom was totally underwhelmed by the idea. He seemed to feel that a new motherboard for the A1000 would cost as much to produce as a complete A500 and would not have a large enough sales potential to justify the costs involved. After several minutes of discussion he did agree to consider the idea if we, the A1000 owners, could prove there was enough interest in such a product.

Now it's up to me, and to you, and everybody else who owns an Amiga 1000, or any other Amiga for that matter. Send a letter to Paul Higginbottom, Amiga Product Manager, at Commodore. Get up a petition at your local users' group; post messages on all the BBS's and commercial services you belong to. And while you're at it, send copies to Irving Gould, Commodore's Chairman of the Board. It's in your interest not to be left totally behind and lose your investment in expensive add-ons for the A1000 that you can't use on an A500 or A2000. —Rick Jones
Librarian, Amiga Friends
Orange, CA



A few of the 41 typefaces included in AlohaFonts V. III, *usable with programs that support Amiga system fonts.* *READER SERVICE NO. 237*

Continued from page 15

FONT MAKER UPDATE

V. 1.05 of the *Calligrapher* font editor ($129.95) autoconfigures for PAL or NTSC (V. 1.0 had to be ordered as one or the other). Also, the added *Font-Mover TM* program saves time copying fonts, permits easy arrangement of fonts without exiting to the CLI, automatically corrects defective font files, and provides data on available chip/fast memory and the disk currently in use. Registered owners of V. 1.0 can upgrade for $29.95.

InterActive Softworks, 619-434-5327 (see address list, page 12).

MORE FONTS

AlohaFonts Volume III ($29.95) contains 41 different typefaces in sizes ranging from 16 to 99 points, usable with all programs that support the Amiga's system fonts. Still available are *Volume I* (20 fonts, $19.95) and *II* (43 fonts, $29.95).

AlohaFonts (see address list, page 12).

DRUM MACHINE

Adrum ($79.95), a four-voice rhythm maker, is capable to stereo output using sound samples loaded from disk in IFF format. The program can have up to 26 IFF sounds in memory at once, and up to 64 different measures of variable length can be defined with a sequencer. Editing features include selective removal, replacement, measure copy, and delete/insert commands. In, out and clock MIDI are supported.

Haitex Resources, 214-241-8030 (see address list, page 12).

REPS WANTED

The Disc Company is looking to appoint one member of every known Amiga user group to serve as its liaison, conducting product demonstrations and performing other functions in exchange for free software, cash, and prizes. Interested individuals should contact Jack Edelstein.

The Disc Company, 313-665-5540 (see address list, page 12).

The November issue of *Ahoy!'s AmigaUser* will go on sale October 11

New from SunRize Industries



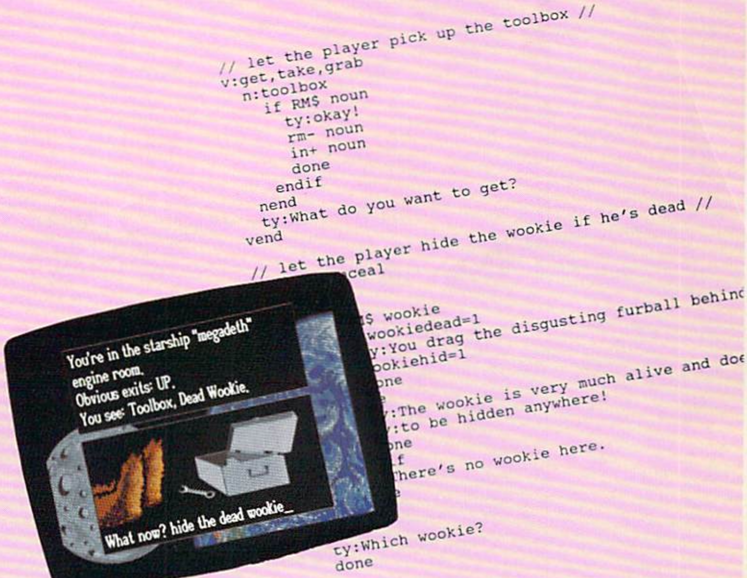
Splitter from a VCR.

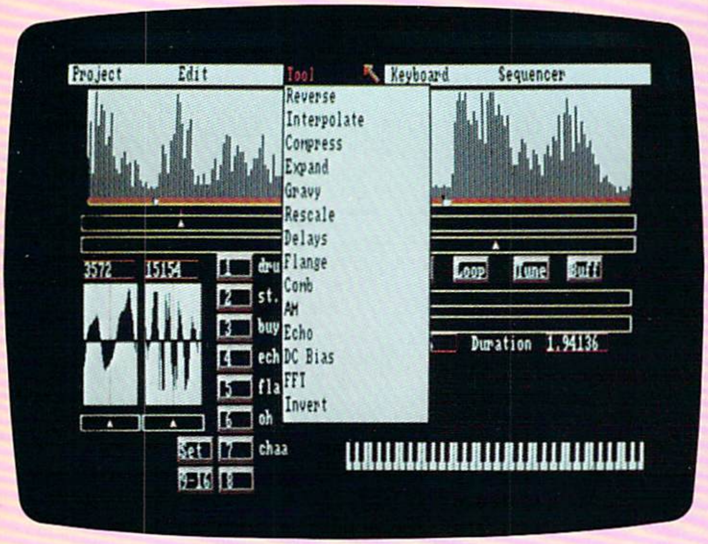
ELECTRONIC COLOR SPLITTER MAKES RGB WHEEL OBSOLETE

Device takes the place of RGB wheel to capture color video from camera. Also gives you the ability to capture color video from VCR. Unit has RGB selector switch (for Digi-View users). With Perfect Vision, pictures are captured automatically in 1.5 seconds. Digi View takes 60 seconds and may not be compatible with some VCRs. **SUGGESTED RETAIL PRICE: $99.95**

PERFECT VISION

Capture pictures from a video camera or VCR. Display in color or store as IFF for use in compatible programs. Real time B&W images (1/60 second). Color images require a bit more time. Unit includes its own power supply and fine tuning adjustments for contrast and brightness. Compatible with model 500, 1000 and 2000 Amigas. **SUGGESTED RETAIL PRICE: $249.95**





STUDIO MAGIC

The ultimate music and sound workshop with 12 digital effects including echo, delay, flanges, etc. Input sounds from stereo, VCR or microphone (with Perfect Sound interface) or a keyboard (with MIDI interface). Edit (cut, paste, overlay, etc.) digitized sounds using menu driven tools. Compatible with model 500, 1000 and 2000 Amigas. **SUGGESTED RETAIL PRICE: $99.95**

ADVENTURE WORKSHOP

A totally new idea in games: write your own adventures in an easy to learn adventure language. You create the sequences and the consequences. Your finished games can be saved and run again or traded to a friend. Comes with two complete games ready to play, manual with examples and suggestions, starter set of IFF icons (weapons, creatures, backgrounds), digitized sounds, everything you need to become a master game maker. **SUGGESTED RETAIL PRICE: $59.95**

SI *SunRize Industries*
3801 Old College Road
Bryan, TX 77801
(409) 846-1311.


COMING SEPTEMBER '88
FROM THE CREATORS OF
BEACH-HEAD
...IT'LL BLOW YOU AWAY.
ACCESS™
Software Incorporated
ACCESS SOFTWARE INC., 545 WEST 500 SOUTH, BOUNTIFUL, UTAH 84010 (801) 298-9077